

R03-OW-2010-0736



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

NOV 10 2010

November 8, 2010

The Honorable Lisa P. Jackson
Administrator
U. S. Environmental Protection Agency
Water Docket, Mailcode: 28221T
1200 Pennsylvania Ave., NW
Washington, DC 20460

Re: Chesapeake Bay TMDL -- Docket no. EPA-R03-OW-2010-0736

Dear Administrator Jackson:

On behalf of the Chesapeake Bay Foundation's (CBF) more than 200,000 members, many of whom live, recreate and work along the shorelines of, or in the waters of, the Chesapeake Bay and its tributaries, including those waters designated as impaired under Section 303 of the Clean Water Act (CWA), please accept this letter and its attachments as formal comment on the Draft Chesapeake Bay Total Maximum Daily Load (TMDL). Incorporated herein by reference, also, are the comments submitted on November 8, 2010 by the Choose Clean Water Coalition as well as those submitted by Donald Boesch, *et al.*

First of all, we want to acknowledge and thank the many dedicated Environmental Protection Agency (EPA) staff who have been working, since 2005, on the development of this TMDL. CBF has been an active participant in this process and can attest, firsthand, to the scientific integrity, transparency, and fairness of this process. In particular, we want to acknowledge Bob Koroncai and Rich Batiuk for their extraordinary efforts in guiding this work. They have displayed, through their leadership of the Water Quality Goal Implementation Team during the last five years of meetings and conference calls, the best of what government can be by ensuring openness and responsiveness throughout the process. We also thank them for the innumerable hours, starting in fall of 2009, spent traveling across the Chesapeake's watershed to conduct public meetings on the proposed TMDL, educating the public and obtaining feedback from interested parties.

Given this extraordinary opportunity for public input on the development of the proposed TMDL, along with the long history of Chesapeake Bay restoration efforts and legal obligations to develop the TMDL, recent calls for an extension of the 45-day public comment period are disingenuous, at best. We wholeheartedly support EPA's decision to hold firm on its commitment, and that of the Bay jurisdictions, to complete the Bay TMDL by December 31, 2010, which is also legally supported by our recent settlement

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agreement with EPA in *Fowler v. EPA*. (Copy of the Notice of Intent of October 29, 2009, Complaint of January 5, 2009, and Settlement Agreement May 10, 2010, attached hereto and incorporated herein by reference.)

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water listings for many watershed states. *See, e.g., American Canoe v. EPA*, 54 F. Supp. 2d 621 (E.D. Va. 1999). On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, along with one of your predecessors, former EPA Administrator Carol Browner, the *Chesapeake 2000* agreement which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. In the fall of that same year, the governors of New York and Delaware signed a formal agreement to work with the other jurisdictions to “achieve the nutrient and sediment reduction targets...to achieve the goals of a clean Chesapeake Bay by 2010,” with West Virginia following suit in 2002. In addition, as further described below, Congress amended and recodified the CWA to require the development of plans that would ensure attainment of the water quality goals, among others, memorialized in the *Chesapeake 2000* agreement. 33 U.S.C. § 1267(g).

In December 2003, the EPA, and other Bay jurisdictions agreed to nitrogen, phosphorus and sediment allocations that became the basis for “tributary strategies,” plans designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. This resulted in the release of the jurisdiction-specific “tributary strategies” between 2004 and 2006. However, by 2007 it became clear that by the 2010 timeframe, water quality of the Bay would not be restored, the impaired waters would not be de-listed, and—as a result of the failure to achieve that goal—the need to develop the Bay TMDL would arise. Since that time, all Bay jurisdictions have fully participated in the process of developing the Bay TMDL.

Since the signing of the first Chesapeake Bay Agreement in 1983, some progress has been made in implementing the practice needed to reduce nitrogen, phosphorus and sediment pollution. However, two recent studies indicate much remains to be done. A report by the U.S. Department of Agriculture highlights that although progress has been made on reducing pollution from farm fields through conservation practice implementation in the Chesapeake Bay region, a significant amount of conservation management remains to be done to reduce nonpoint agricultural sources of pollution¹. This report also provides independent confirmation of the conclusions of the Chesapeake Bay watershed model with respect to estimates of pollution loads associated with the agricultural sector. A recent report by the U.S. Geological Survey similarly concludes

¹ USDA October 2010. Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region

that progress in reducing actual pollution loads in the Chesapeake watershed, particularly in those systems dominated by nonpoint sources, is lagging.² The evidence is clear: our mostly voluntary efforts to date are woefully inadequate. We now have both a legal and moral imperative to move beyond 30 years of insufficient progress and unmet obligations and establish a new, enforceable blueprint for restoration. The key to success is the proposed Chesapeake Bay TMDL as described in EPA's "Accountability Framework."

**EPA's Accountability Framework is Firmly Based on
Its Authority Under the CWA**

*Section 303 of the CWA and the TMDL Regulations are Clear:
TMDLs Shall be Set at a Level Necessary to Implement
The Applicable Water Quality Standards.*

The CWA triggers the need for a TMDL when efforts to meet water quality standards fail.³ States are first required to set water quality standards for all waters within their boundaries. If the states do not set water quality standards, or the EPA determines that the standards do not meet the requirements of the Act, EPA will promulgate standards for the state. 33 U.S.C. §§ 303(b), (c)(3)-(4).

The CWA requires the establishment of technology-based controls on point sources; this occurs through the application of the "best practicable control technology" effluent limitations for most point source discharges. 33 U.S.C. § 1311(b)(1). When these technology-based controls are insufficient in meeting and maintaining water quality standards, the CWA requires the establishment of water quality-based controls under Section 303(d). Section 303(d)(1)(A) of the Act requires each state to identify waters within its boundaries when these water quality standards are not met for an applicable water segment. For these "impaired" waters, each state must then "establish . . . the total maximum daily load [TMDL], for those pollutants which the Administrator identifies . . . as suitable for such calculation." 33 U.S.C. § 1313(d)(1)(C). A TMDL is a specification of the maximum amount of a particular pollutant that can pass through a waterbody without water quality standards being violated. *Id.* at 1313(d)(1)(C). Such "load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge. . . ." *Id.* These requirements apply to both point sources and nonpoint sources of pollution. *Pronsolino v. Nastri*, 291 F.3d 1123, 1139 (9th Cir. 2002). Once

² Hirsch, R.L., D.L. Moyer, and S.A. Archfield. 2010. Weighted regressions on time, discharge and season (WRTDS), with an application to Chesapeake Bay River inputs. *Journal of the American Water Resources Association*.

³ There is no question that the states and EPA are required to establish TMDLs when triggered by the CWA. See *Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on Congress' use of the word "shall" in section 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs).

EPA approves the 303(d) list and any associated TMDL,⁴ the CWA requires that that state incorporate the list and TMDLs into its continuing planning process. *Id.* at § 303(d)(2).

Further, each state “shall have a [management plan]” that is consistent with the CWA and contains the “total maximum daily load for pollutants” and a provision for “adequate implementation, including schedules of compliance, for revised or new water quality standards.” 33 U.S.C. §§ 1313(e)(3)(C), (F). The CWA regulations are also clear on this point as TMDLs are to be included as part of Water Quality Management Plans used to direct implementation. 40 C.F.R. Part 130.6(b), (c). Again, the use of the Water Quality Management Plans – that include TMDLs – are required in order to achieve the applicable water quality standards. The Bay TMDL, therefore, must be established and implemented with mandated steps to achieve the water quality standards.

As such, EPA must reject state submitted TMDLs that do not provide reasonable assurances they will “implement applicable water quality standards.” 33 U.S.C. § 1313(d)(2). The goal of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). Without question, these congressional goals will only be advanced if there are reasonable assurances of implementation of TMDLs to improve water quality. Courts have long recognized this principle. In *American Canoe Ass’n, Inc. v. EPA*, the Court-ordered schedule in the Virginia TMDL case “ensures that the CWA shall not be reduced to empty formalism.” 54 F. Supp. 2d 621, 628 (E.D. Va. 1999). Similar court pronouncements on implementation of the CWA can be found elsewhere. See *Natural Resources Defense Council, Inc. v. Texaco Refining & Mktg, Inc.*, 20 F. Supp. 2d 700, 708 (D. Del. 1998) (Court concluded that the public interest, as revealed by the “spirit and intent” of the CWA, would best be served by mandating the implementation of a monitoring program).

TMDLs are one of the very last lines of defense to improve water quality. The CWA calls for them when permits for point sources and controls for nonpoint sources fail to protect water quality. See 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(1). If TMDLs fail, there are no other comprehensive pollution abatement programs under the CWA.⁵ As such, and as required by the CWA, TMDLs must be established at a level necessary to meet water quality standards. In order to meet water quality standards, there must be “reasonable assurances” that TMDLs will be implemented both for point and nonpoint sources. Otherwise, Congress’ goals in the CWA will never be achieved and the Bay TMDL will be little more than a lengthy exercise in re-stating much of what we already know.

⁴ Or, if the state fails to prepare an adequate TMDL, EPA can do so. *Scott v. Hammond*, 741 F. 2d 992 (7th, Cir. 1984) (holding that lengthy inaction on the part of a state can constitute a “constructive submittal” of an inadequate TMDL, thereby transferring the duty to prepare to EPA).

⁵ The Administrator does retain residual designation and emergency powers authorities but there is no other comprehensive management program like the TMDL provisions.

A Bay Jurisdictions' Watershed Implementation Plan (WIP)
Must Meet the Bay TMDL Allocations and Provide Reasonable Assurances

EPA is required to ensure that the Bay jurisdictions will meet their respective TMDL allocations. And the CWA provides the states with the responsibility of establishing to EPA's satisfaction how they will achieve those goals. EPA has executed these elements of the CWA by directing the states to develop Watershed Implementation Plans (WIPs)⁶ that delineate how it will achieve the TMDL waste load and load allocations. See September 11, 2008 letter from the EPA to the Principals' Staff Committee. The requirement that Bay jurisdictions adopt an adequate WIP that implements the Bay TMDL, meets the Bay TMDL allocations, and includes reasonable assurances of point and nonpoint source pollution reductions is a crucial aspect of the Bay TMDL and its "accountability framework."⁷

The WIP fills several essential components of EPA's accountability framework. Together, the jurisdictions' WIPs are to meet – and not exceed – the Bay TMDL's total nutrient and sediment allocations. Individually, each jurisdiction's WIP must meet its allocations and sub-allocate them among point and nonpoint source sectors and individual permitted sources.⁸ Further, while the WIP must identify specific actions and assurances, EPA's process has provided the states with a high degree of flexibility. For example, the WIP identifies specific actions and controls to be 60% implemented by 2017 and 100% implemented by 2025. The WIP must provide information concerning interim and final nutrient and sediment target loads; current loading baselines and program capacity (including current legal, regulatory, programmatic, financial, staffing and technical capacity to deliver the target loads); ways to address growth; an analysis of gaps in program capacity; commitments and strategies for filling the gaps; tracking and reporting protocols; contingencies for slow or incomplete implementation; and detailed targets or schedules. The states have the opportunity to adjust the WIP provisions at least every two years as it develops further information and assesses progress.⁹ Thus, the WIP is a living, evolving document.

As previously noted, a WIP, as a CWA implementation tool, must provide reasonable assurances that the jurisdiction can and will achieve its TMDL allocations, both point and nonpoint source allocations. EPA has issued a plethora of guidance confirming that reasonable assurances are the binding, enforceable and/or incentive based tools that

⁶ In addition, the plan mandated by CWA Section 117(g), discussed below, can also be considered a fundamental element of the CWA Continuing Planning Process. See *Environmental Defense Fund v. Cosile*, 657 F.2d 275(D.C. Cir. 1981).

⁷ See Executive Order 13508.

⁸ A state could assign all of its allocation to solely point sources, if it chose to do so, but if it were to do so, it would be unlikely, or impossible, for the state to achieve the total allocation. Thus, the WIP must address nonpoint source sectors. .

⁹ See EPA correspondence to former Virginia Secretary of Natural Resources Preston Bryant, Jr., for the Chesapeake Bay Program Principals' Staff Committee (November 9, 2009), at 15.

demonstrate future attainment of water quality goals. For example, in 1991, EPA explained:

“Assurances may include the application or utilization of local ordinances, grant conditions, or other enforcement authorities. For example, it may be appropriate to provide that a permit may be reopened for a WLA which requires more stringent limits because attainment of nonpoint source load allocation was not demonstrated. . . State nonpoint source management programs may include, as appropriate, non-regulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects.¹⁰ The TMDL is established so that the statutorily-required water quality standards are achieved, reasonable assurances must be given that the nonpoint source load allocations will be achieved.”¹¹

EPA’s 1997 TMDL guidance, “New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)” further provides: “It is now time to move towards the next stage of our strategy to achieve water quality standards – to make sure that TMDLs are established for all listed waters, and that the load allocations established by TMDLs are implemented by point and nonpoint sources alike.”¹² The guidance continues by explaining that “reasonable assurances that the nonpoint source load allocations established in TMDLs (for waters impaired solely or primarily by nonpoint sources) will in fact be achieved. These assurances may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs.”¹³ To the same effect is EPA’s 2002 document, “Guidelines for Reviewing TMDLs under Existing Regulations issued in 1991”: For waters that are impaired by both point and nonpoint sources, “reasonable assurances that nonpoint source control measures will achieve expected load reductions [are required] in order for the TMDL to be approvable.”¹⁴

EPA offered a similar explanation in 2009, as the Bay TMDL process gathered strength:¹⁵

“When EPA establishes or approves a TMDL that allocates loads to both point and nonpoint sources, it determines whether there is a “reasonable assurance” that the nonpoint source load allocation will, in fact, be achieved and water quality standards be attained. EPA does this to be sure that the load allocations are not

¹⁰ See 1991 Guidance (emphasis added), EPA 440/4-91-001, at 6.

¹¹ Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992 (US EPA 1991a), <http://www.epa.gov/owow/tmdl/guidance/final52002.html>.

¹² Id., at 1.

¹³ Id., at 6.

¹⁴ “Guidelines for Reviewing TMDLs under Existing Regulations issued in 1991,” at 5.

¹⁵ See EPA correspondence to former Virginia Secretary of Natural Resources Preston Bryant, Jr., for the Chesapeake Bay Program Principals’ Staff Committee (November 9, 2009), at 15.

based on too generous assumptions regarding the amount of nonpoint source pollutant reductions that will occur. . . If the reductions embodied in load allocations are not fully achieved because of a failure to fully implement needed nonpoint pollution controls, the collective reductions from point and nonpoint sources will not result in attainment of the water quality standards.”¹⁶

Moreover, the settlement agreement entered among the parties in *Fowler v. EPA* (Case No. 1:09-CV-00005-CKK, D.C. May 10, 2010) explicitly addresses the need for reasonable assurance in the development of the Bay TMDL – and EPA’s obligation to ensure this essential element of the TMDL and WIPs is met. While the case dealt with the failure of EPA to sufficiently implement the provisions of the many Chesapeake Bay Agreements, including the *Chesapeake 2000* agreement, the settlement agreement obligated EPA to establish a TMDL that included a reasonable assurance and implementation framework that demonstrated “nonpoint source loading reductions will be achieved.” See attached Settlement Agreement.

*Voluntary Measures Do Not Provide Reasonable Assurance
And Do Not Satisfy the Requirements of the CWA*

The intent of the CWA is to actually clean the waters of the nation. The provisions dealing with the development and implementation of TMDLs are meant to accomplish the removal of waterways from the CWA impaired waters list. It is not the intent of the CWA that the TMDL provisions are to merely create mounds of paperwork explaining the condition and needs of waterways with no way to restore clean water.

The legislative history of the CWA, passed in 1972, demonstrates that the TMDL program was created as a means to correct the shortcomings of the Water Quality Act of 1965 – an Act that failed to provide any “reasonable assurances” that water quality standards would, in fact, be achieved. A TMDL is a tool to ensure the achievement and attainment of water quality standards. See *Environmental Defense Fund Inc. v. Costle*, 657 F.2d 275, 279 (D.C. Cir. 1981). The very futility of a voluntary program was the reason behind the enactment of the CWA. As the House committee stated, “America’s waters are in serious trouble, thanks to years of neglect, ignorance, and public indifference.” H. Rep. No. 92-911, at 66 (1972). In fact, the evidence suggesting that “purely voluntary” plans generally do not work is overwhelming.¹⁷ Additionally, the futility of exclusively voluntary measures is routinely recognized by courts in the context of a number of environmental statutes. For example, in *Sierra Club v. EPA*, 99 F.3d 1551 (10th Cir. 1996), the Court held that before EPA could redesignate an area from non attainment to attainment under the Clean Air Act, it must “determine that the

¹⁶ *Id.*, at 5. See also U.S. E.P.A. (2002).

¹⁷ See *Putting the Pieces Together: State Nonpoint Source Enforceable Mechanisms in Context*, ELI Project No. 970302 (June, 2000).

improvement in air quality is due to permanent and enforceable reductions in emissions” and not to voluntary compliance measures. *Id.* at 1557; *See also Environmental Defense Fund v. EPA*, 167 F.3d 641, 656 (D.C. Cir. 1999) (citing CAA requirement that state implementation plans contain “enforceable control measures.”).

Distrust of voluntary compliance is also evident in cases involving the National Environmental Policy Act, 42 U.S.C. §§ 4321-4370e. To avoid having to prepare an environmental impact statement, agencies often outline future mitigation measures to be undertaken to lessen the impact of a particular project. To ensure that these proposed mitigation measures actually occur, courts routinely require more than mere voluntary compliance. There must be a guarantee that the proposed mitigation measures will be utilized. *See Cabinet Mountain Wilderness v. Peterson*, 685 F.2d 678 (D. C. Cir.1982) (Forest Service ensured that affirmative mitigation measures would occur); *Sierra Club v. Peterson*, 717 F.2d 1409, 1411 (D.C. Cir. 1983) (Stipulations attached to oil and gas leases were not adequate because while the Department of the Interior could impose conditions, they could not preclude the proposed activity.).

Further, in the context of the Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531-1544 (1973), numerous courts have held “purely voluntary” programs to be inadequate because they offer no assurances that species protection will occur. *See Bennett v. Spear*, 520 U.S. 154 (1997) (ESA decisions may not be based on “speculation or surmise”); *Biodiversity Legal Foundation v. Babbitt*, 943 F. Supp. 23 (D.D.C. 1996) (Agency cannot use “promises of proposed future action” as an excuse); *National Wildlife Federation v. Coleman*, 529 F.2d 359, 374 (5th Cir. 1976) (Reliance on proposed, unenforceable actions insufficient); *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987) (Corps violated ESA by relying on speculation that activities will occur); *Oregon Natural Resources Council v. Daley*, 6 F. Supp. 2d 1139 (D. Or. 1998) (Future, voluntary, and untested habitat measures are inadequate) (citing *Save Our Springs Legal Defense Fund, Inc. v. Babbitt*, Civ No. 96-168-CA (W.D. Tex. 1997) (Voluntary actions provide “no assurances that measures will be carried out.”); *Natural Resources Defense Council v. U.S. Dept. of the Interior*, 113 F.3d 1121 (9th Cir.1997) (California’s “purely voluntary program” offered “no substantive protection.”).

In all of the above-mentioned cases, the courts have rightly been concerned that voluntary measures do not result in appreciable changes in environmental quality and do not reflect the intent of the scope of laws passed to protect and restore our environment. The same principles apply to the CWA, and specifically to TMDLs. The Bay TMDL must include the reasonable assurances that it will be achieved in order to meet the goals and requirements of the CWA.

The CWA Requires WIPs Specifically for the Chesapeake Bay Under Section 117

EPA’s authority to require WIPs is further substantiated by Section 117 of the CWA which provides:

(g) Chesapeake Bay Program

(1) Management strategies

The Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain –

(A) the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed.

(B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem; ...

33 U.S.C. § 1267(g)(1)(A)-(g)(1)(B). This section was re-codified as part of the Estuaries and Clean Water Act of 2000, Title II Chesapeake Bay Restoration. In recodifying this section, Congress stated that the purposes of the Act were to “(1) expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay, and; (2) to achieve the goals established in the Chesapeake Bay Agreement.” *Id.* Congress concluded that the mere development of a plan was not sufficient: the plan and implementation of it were to actually accomplish Bay agreement goals. Pub.L. 106-457, Title II, Sec. 202(b)(2), Nov. 7, 2000, 114 Stat. 1967.

Accordingly, Section 117(g) explicitly provides additional authority for the development of WIPs: the “management plans” which will achieve both the “nutrient goals” for the “quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed” (i.e., the load and wasteload allocations of the TMDL) as well as the “the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem” (i.e., the plan must actually lead to the achievement of the load and wasteload allocations).

*EPA Has the Obligation to Enact Consequences
For Inadequate WIPs that Fail to Provide Reasonable Assurance*

Unfortunately, none of the WIPs as originally submitted by the Bay jurisdictions provide reasonable assurance. In spite of the clear directives provided by EPA, EPA has concluded that all of the WIPs, to one degree or another, have failed to meet the test of reasonable assurances.¹⁸ Others have reached the same conclusion. *See* Chesapeake Bay Foundation letters to EPA on the jurisdictional WIPs (for New York, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and the District of Columbia), attached hereto and incorporated herein by reference.

¹⁸ It is important to note that any ambiguities as to the EPA Administrator's powers under the Clean Water Act are to be resolved in his favor. *E.I. DuPont de Nemours & Co. v. Train*, 430 U.S. 112, 128-29, 97 S. Ct. 965, 975, 51 L. Ed. 2d 204 (1977); *Inland Steel Corp. v. EPA*, 574 F.2d 367, 373 (7th Cir. 1978).

If the TMDL is to accomplish its goal of clean water and removal of the Chesapeake Bay and its waters from the impaired waters list, and if the WIPs are insufficient implementation tools to do so, EPA has no alternative but to invoke consequences. EPA has identified these consequences in its letters of November 4, 2009, and December 29, 2009, both addressed to the members of the Principals' Staff Committee. The need for EPA action is similarly noted in the attached Settlement Agreement (*see* Section III. A. 4 and III. B.7).

Among the potential consequences is the withdrawal of delegation of a state's CWA permit program. Federal regulations provide the Administrator the authority to begin the process of withdrawal on her own initiative. 40 C.F.R. 123.64. An insufficient WIP, lacking reasonable assurances – that is, operating a delegated CWA program designed to maintain, not correct, the impairment of the Bay and its waters – is solid ground for withdrawal. *See* 40 C.F.R. 123.63 (Withdrawal may be based upon failure to promulgate or enact new authorities when necessary.).

EPA Needs to Play a Stronger Role in Governing Nutrient Trading and Offsets

For the last several years, CBF has been actively engaged in the development of the nutrient trading programs in Maryland, Virginia and Pennsylvania. The Chesapeake Bay TMDL provides a unique opportunity to demonstrate that a nutrient trading program, subject to strict oversight and carefully-crafted rules keyed to environmental performance targets, can help make a regulatory program function in a more economically efficient way. In particular, there is the potential for nutrient trading to help local governments comply with stormwater permits in a more cost-effective way and as a framework to account for, and offset, new loads of nitrogen and phosphorus resulting from growth and development.

As with other elements of the Chesapeake Bay Program, successful work on offsets and trading in the Chesapeake Bay could serve as a powerful model to consider in other watersheds. Unfortunately, substantial differences currently exist among the trading programs that have developed in the watershed states. This not only presents issues of inequity, but also will hamper efforts to establish an interstate trading program that could present even more opportunities for economic efficiency. Consequently, EPA needs to work to harmonize the state programs and use its oversight of the WIPs and of state-issued permits to ensure that offsets for new growth and trades to meet reduction targets operate by the same rules – rules that ensure transparency, accountability, scientific integrity, and consistency – among jurisdictions. *See* EPA guidance entitled “Guide for the Evaluation of Watershed Implementation Plans,” dated April 2, 2010 and attached Settlement Agreement of May 10, 2010, specifically Section III.B.4.f and 11 (EPA oversight of offsets a specific obligation.)

EPA's Appendix S, "Offsetting New or Increased Loadings of Nitrogen, Phosphorous and Sediment to the Chesapeake Bay Watershed", and Section 10, TMDL Implementation and Adaptive Management, outline broad expectations for offset programs within and among Bay states. The use of a comprehensive set of definitions, common elements and program features that guide trading among both new and existing sources of nitrogen and phosphorous are necessary to further effectuate success. Clear, rigorous and consistent rules will help maintain the integrity of a trading system while fostering market clarity and stability. The principles outlined in Appendix S, in combination with many strong elements in EPA trading policies, must be implemented to ensure that trading contributes to, and does not undermine, progress toward meeting the TMDL goals.

In particular, EPA needs to play a strong and active role in defining "baseline." In this context, we are referring not only to the baseline that must be achieved before an entity can sell credits in the compliance market, but also the baseline for estimating new loads that need to be offset.

In the case of the former, EPA should require the states to demonstrate that their baseline for sellers equates to that entity's proportion of achieving the Bay TMDL. The current definition of baseline in Pennsylvania for agricultural producers would not meet this standard. EPA must establish a requirement for this demonstration from all states that wish to participate in nutrient trading. Furthermore, it is likely that the baseline will need to be a performance-based approach that requires a certain level of pollution reduction. This will provide greater flexibility in how achievement of the baseline occurs (when compared to a more prescriptive approach) and will ensure consistency with necessary pollution reduction targets.

In terms of setting the baseline for offsetting new loads, EPA action needs to reflect elements reflected in the policy document submitted by CBF in September in response to a request for informal comments on Appendix S. A copy of the document is attached and incorporated herein by reference.

Finally, EPA must lead efforts to harmonize accounting and verification systems for nutrient credits, including the establishment of a regional nutrient credit registry. *See* attached Settlement Agreement, specifically Section III.B.11. Currently, there are at least two calculation tools that are being used to estimate pollution loads from farms: "NutrientNet" developed by the World Resources Institute and the "Nutrient Load Estimator" developed by Water Stewardship Inc. Potentially, the loadings output from these two models may be different and this disconnect has the potential to add an unnecessary layer of confusion and skepticism to the nascent trading market. In collaboration with the Natural Resources Conservation Service, EPA must drive a consensus on the calculation tool as well as verification procedures for nutrient credits.

Conclusion

We have before us, the opportunity of a lifetime – to not repeat the failings and broken promises of the past, but rather chart a new course for Chesapeake Bay restoration. We encourage EPA to hold firm in the face of the opposition – those who would prefer to see the status quo, rather than real progress. Those that would prefer to criticize, rather than work for solutions. Those that would prefer to leave a legacy of polluted waters for our children rather than have the courage to take action.

Administrator Jackson, you and your agency have received literally thousands of letters from citizens across the Chesapeake Bay watershed, urging EPA to stand firm on the Bay TMDL. You have our sincere thanks for your strong leadership on the restoration of the Chesapeake Bay and its waters and, in particular, on the precedent-setting, and necessary, TMDL.

We look forward to continuing to work with EPA on the implementation of a strong, enforceable, accountable Bay TMDL.

Sincerely,



Roy A. Hoagland
Vice President, Environmental Protection and Restoration

Attachments

Copy:

The Honorable Shawn Garvin, Regional Administrator, EPA Region III

J. Charles Fox, EPA Senior Advisor on Anacostia and Chesapeake Bay

Jeffrey Corbin, EPA Region III

Robert Koroncai, EPA Region III

Richard Batiuk, EPA Chesapeake Bay Program Office

INVENTORY OF ATTACHMENTS

Fowler v. EPA, Notice of Intent, October 29, 2009

Fowler v. EPA, Complaint, January 5, 2009

Fowler v. EPA, Settlement Agreement, May 10, 2010

Chesapeake Bay Foundation Letter on New York WIP

Chesapeake Bay Foundation Letter on Pennsylvania WIP

Chesapeake Bay Foundation Letter on Delaware WIP

Chesapeake Bay Foundation Letter on Maryland WIP

Chesapeake Bay Foundation Letter on Virginia WIP

Chesapeake Bay Foundation Letter on West Virginia WIP

Chesapeake Bay Foundation Letter on District of Columbia WIP

Chesapeake Bay Foundation Recommendations for Calculating Offsets

Attachment

Notice of Intent
October 29, 2009



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

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W. TAYLOE MURPHY, JR.

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JOHN R. WHITMORE

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CHARLES McC. MATHIAS

H. TURNER MCKNIGHT

GODFREY A. ROCKEFELLER

RUSSELL C. SCOTT

EDMUND A. STANLEY, JR.

AILEEN BOWDOIN TRAIN

October 29, 2008

By Certified Mail

Stephen L. Johnson
 Administrator
 U.S. Environmental Protection Agency
 Ariel Rios Building
 1200 Pennsylvania Avenue, N.W.
 Washington, DC 20460

Michael B. Mukasey
 Attorney General of the United States
 U.S. Department of Justice
 950 Pennsylvania Avenue, NW
 Washington, DC 20530-0001

Re: Notice of Intent to Sue for Failure to Comply With the Chesapeake 2000 Agreement

Dear Sirs:

Pursuant to Clean Water Act Section 505, the Honorable C. Bernard Fowler, the Honorable Harry R. Hughes, the Honorable W. Tayloe Murphy, Jr., the Honorable Anthony A. Williams, along with the following organizations, the Virginia State Waterman's Association, the Maryland Watermen's Association, the Maryland Saltwater Sportfishermen's Association, the Chesapeake Bay Foundation, Inc., and their respective members, hereby inform you of their intent to file suit against the United States sixty (60) days after the date of this letter if satisfactory response to the claims discussed below is not provided. As discussed more fully below, we base our claims on the failure of the Administrator of the United States Environmental Protection Agency (EPA) to comply with the term of the Clean Water Act, the Administrative Procedure Act, and the Chesapeake Bay Agreements. These failures have led to the continued decline of water quality in the Chesapeake Bay (Bay) and the resulting catastrophic loss of blue crabs, fish, oysters, and underwater grasses. These natural resources fuel the economic engine of the Chesapeake Bay which is of significant importance to the region and the nation.

While the United States has undertaken programs designed to restore the Bay, they have failed to achieve the water quality goals set by Congress and the Chesapeake Bay Agreements to which the United States is a signatory. This failure has persisted for decades despite repeated acknowledgements by the United States of its responsibility to the public and the environment, *e.g.*, the 1987 Bay Agreement, its 1992 amendment, and numerous federal memoranda of agreement. Most recently, in July 2008, EPA admitted that it again would not meet the water quality goals; specifically, the Chesapeake 2000 Agreement goal of removing the Chesapeake Bay and its tidal tributaries from the Clean Water Act section 303(d) impaired waters list by 2010.

The failure of the Administrator to comply with the federal laws and interstate agreements designed to achieve and maintain essential water quality goals for the Bay is directly related to Secretary of Commerce Gutierrez' recent declaration that the Chesapeake Bay commercial blue crab fishery is a resource disaster. With less than two years until the 2010 deadline, it is time for the Administrator to honor his commitment to the citizens of the United States.

THE SIGNATORIES TO THIS AGREEMENT

The Honorable C. Bernard "Bernie" Fowler is a former State Senator from Prince Fredrick, Maryland. During the 1950s and 60s, Senator Fowler was a crabber and fisherman on his home river the Patuxent. Since 1988, on the second Sunday in June, Senator Fowler wades into the Patuxent River at Broomes Island in order to see how deep he can walk and still see his white sneakers. While there has been some improvement in water clarity since 1988, he still cannot see his sneakers at the depth he could when he was a waterman.

Senator Fowler has been a member of the Chesapeake Bay Commission since the mid 1980s. He signed the 1992 amendment to the 1987 Bay Agreement as Chairman of the Commission. Senator Fowler is currently the Maryland citizen representative to the Commission.

The Honorable Harry R. Hughes was the Governor of Maryland from 1979 to 1987. He currently resides in Denton, Maryland. Governor Hughes signed the historic 1983 Chesapeake Bay Agreement, the first interstate compact between the Bay states, the District of Columbia, and the United States designed "to improve and protect the water quality and living resources of the Chesapeake Bay estuarine systems."

The Honorable W. Tayloe Murphy, Jr., is an attorney in Warsaw, Virginia, who resides on a farm along the shores of the Potomac River. He was the Secretary of Natural Resources for the Commonwealth of Virginia from 2002 to 2006. During a portion of that period he was Chairman of the Chesapeake Bay Program's Principals' Staff Committee. Secretary Murphy was a Delegate of the Virginia General Assembly from 1982 to 2000. He was an instrumental leader behind the General Assembly's passage of both the Chesapeake Bay Preservation Act and the Virginia Water Quality Improvement

Act. Secretary Murphy was Vice Chairman in 1987, three times the Chairman (1988, 1991, and 1997), and a member of the Chesapeake Bay Commission for 22 years.

During his lifetime, Secretary Murphy has watched a vibrant commercial seafood industry die. He is deeply disturbed that watermen he has known all his life, whose livelihoods depended on healthy resources, have lost their jobs because of the lack of commitment to protect the Bay and its tidal tributaries like the Potomac River.

The Honorable Anthony A. Williams was the mayor of Washington, D.C., from 1997 to 2007. From 2000 to 2002 he chaired the Bay Executive Council. Mayor Williams is a strong advocate for the clean up of the Anacostia and Potomac Rivers. He signed the Chesapeake Bay 2000 Agreement on behalf of the District of Columbia. When he signed the Agreement, Mayor Williams believed that the goal of removing the Bay and its tidal tributaries from the Clean Water Act impaired waters list by 2010 was a binding commitment of all the signatories including the United States.

The Virginia State Waterman's Association is comprised of the various watermen groups on both Virginia's eastern and western shores, including Tangier Island. Those groups are: Virginia Watermen's Association; Eastern Shore Watermen's Association; Tangier Watermen's Association; Upper River Watermen's Association; Twin Rivers Watermen's Group; York River/Croaker Landing Working Waterman's Association; and Coastal Virginia Waterman's Association.

The Maryland Watermen's Association is comprised of the various waterman groups on both Maryland's eastern and western shores, including Smith Island.

The members of both watermen's associations are working Bay watermen who spend long hours in all kinds of weather searching the Bay and its tidal tributaries for crabs, fish, and oysters to bring to market. Their culture and livelihood have been severely damaged by the poor water quality in the Bay and the United States government's failure to comply with the Clean Water Act and the Chesapeake Bay Agreements. *See, below.*

The Maryland Saltwater Sportfishermen's Association (MSSA) is devoted to protecting and enhancing recreational fishing and conserving marine resources. The MSSA is the voice for more than 7,000 recreational anglers in the Chesapeake Bay and mid-Atlantic region.

The Chesapeake Bay Foundation, Inc. (CBF) is a regional, nonprofit, nonpartisan public-interest advocacy organization with members throughout the nation. CBF was created in 1967 under the laws of the state of Maryland. CBF maintains regional offices in: Annapolis, Maryland; Richmond, Virginia; Harrisburg, Pennsylvania; and Washington, D.C.

CBF is the only independent organization dedicated solely to restoring and protecting the Bay and its tributary rivers. Its goal is to improve water quality by reducing

pollution including nitrogen and phosphorous. CBF's vision for the future: a restored Bay with healthy rivers and clean water; sustainable populations of crabs, fish, and oysters; thriving water-based and agricultural economies; and a legacy of success for our children and grandchildren.

CBF has approximately 200,000 total members and nearly 10,000 active adult and student volunteers. Approximately 5,000 members reside in the District of Columbia, 98,800 in Maryland, 13,800 in Pennsylvania, and over 66,000 members reside in Virginia. The majority of CBF's remaining members reside in the states of Delaware, New York, and West Virginia.

CBF operates fifteen (15) educational programs that conduct student leadership projects, in-the-field educational experiences, and other activities in and around the Chesapeake Bay. CBF operates several marine vessels in the Chesapeake Bay and its tributaries. During the last fiscal year, CBF spent approximately \$4.3 million on these educational programs.

CBF also conducts numerous advocacy and restoration programs within the watershed designed to improve water quality in the Bay and its tributaries such as working with farmers to reduce runoff from agriculture, planting buffers along rivers and streams as well as growing oysters and underwater grasses for planting. This fiscal year, CBF spent approximately \$6.5 million on these programs in the Bay region.

Both CBF and its members are adversely affected by poor water quality in the Chesapeake Bay and its tidal tributaries. Thus, they are harmed by the failure of the Administrator to comply with the Clean Water Act, the Administrative Procedure Act, and the Chesapeake Bay Agreements.

Each of the individuals and groups listed here are represented by counsel for CBF: Jon A. Mueller, Esq. and Amy McDonnell, Esq., 6 Herndon Ave., Annapolis, MD 21403; telephone – (410) 268-8816.

THE CHESAPEAKE BAY IS A NATIONAL TREASURE

The Chesapeake Bay is the largest estuary in the United States. Its watershed covers 64,000 square miles from Cooperstown, New York, in the north to Virginia in the south and from West Virginia in the west to Delaware in the east.

Congress has recognized that the Chesapeake Bay is a "national treasure and resource of worldwide significance." Chesapeake Bay Restoration Act of 2000, Nov. 7, 2000, P.L. 106-457, Title II, § 202, 114 Stat. 1967. The restoration and preservation of the Chesapeake Bay is essential for a healthy and vibrant economy. The economic value of the Bay has been estimated at well over a trillion dollars.¹

¹ "In Maryland, for example, economists have measured recreational boating activity at some \$2 billion a year. In Pennsylvania, the estimate is \$4.7 billion a year for fishing activities across the whole state, resulting in 43,000 jobs outfitting, lodging and guiding anglers. A University of Maryland study completed

The Chesapeake Bay region is home to approximately 17 million people many whom rely on the Bay and its tributaries as not only a source of income but as a place to recreate and commune with nature – a priceless commodity. The ports of Baltimore and Norfolk provide thousands of jobs and generate millions of dollars in revenue. The town of Reedville, Virginia, on the Bay's western shore consistently records the second largest catch of fish in the nation. Moreover, some of our nation's most treasured historical places are located within close proximity of the Chesapeake Bay and its tributaries – Antietam (Potomac River), Cooperstown (Susquehanna), Jamestown and Williamsburg (James River), Yorktown (York River), and Washington, D.C. (Potomac and Anacostia Rivers).

In short, the value of the Chesapeake Bay is immeasurable and its virtues should not remain sullied by the federal government's failure to act.

I. Poor Water Quality Has Destroyed the Blue Crab Population

Perhaps no other creature best exemplifies the Chesapeake Bay than the blue crab (*Callinectes* ("beautiful swimmer") *sapidus* ("savory")). Aggressive predators and a key indicator species of the Bay's health, blue crabs comprise one of the most valuable commercial and recreational fisheries in the Bay. As discussed in more detail below (Chesapeake Bay Waterman), blue crabs are a critical link in the Bay food web – without the blue crab, the Bay as we have known it for centuries would no longer exist.

Crabs feed on plankton, fish, and thin shelled bivalves, among other things. However, blue crabs are prey for other fish, birds, and other blue crabs. In fact, crabs comprise a large portion of the juvenile diet of other key Bay species such as the striped bass (rockfish) – a linchpin of a huge commercial and recreational fishery. See, below. People also love eating the savory swimmer either as crab cakes, steamed, or soft shell. Apart from the commercial fishery, countless children spend their summer days on docks all along the Bay's shores delighting in catching crabs. Thousands of adults spend the summer mornings running trot lines hung with chicken parts hoping to catch a bushel of crabs for that night's dinner.

For more than a half century, the blue crab has been at the apex of the Bay's commercial fisheries. Over one-third of the nation's blue crab harvest comes from the Chesapeake Bay. The average commercial harvest between 1968 and 2005 was about 10 million pounds. The commercial blue crab harvest in 2000 was valued at approximately \$55 million.² The recreational fishery also provides a financial off-set for Bay residents; catching crabs provides an inexpensive meal. However, since the 1990's, landings have significantly decreased despite increased crabbing effort.

15 years ago attempted to place a number on the value of the Bay and came up with \$678 billion. Today inflation alone would likely push that number above a trillion." 2004 Chesapeake Bay Watershed Blue Ribbon Economic Panel Report. "Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay," at p. 9.

² See <http://www.chesapeakebay.net/bluecrab.aspx?menuitem=19367>

Given the public's love of the blue crab and its financial importance, the crab has become an icon of the Bay region. Sadly, the numbers of blue crabs within the Bay have fallen dramatically within the last decade dropping from 680 million in 1997 to 283 million in 2008. That is a 70% drop since 1990. According to the most recent winter crab survey, the population of catchable crabs in the Bay is estimated to be approximately 120 million crabs – one of the lowest in history.

In 2007, eighty-eight percent of Chesapeake Bay waters had levels of dissolved oxygen below that approved by EPA and required by the District of Columbia, Maryland, and Virginia. Low oxygen levels drive blue crabs from their preferred habitat and kill many of the small bottom organisms on which the blue crabs feed. The low dissolved oxygen conditions caused by excess nutrients are the primary reason large sections of the Bay have become unsuitable as blue crab habitat.

Moreover, water clarity in the Bay has been decreasing. In 2007, only 12% of the Bay had acceptable water clarity. Poor water clarity is caused by algae blooms and sediment run-off. Limited water clarity has reduced the amount of underwater grasses necessary to protect juvenile crabs, molting crabs, and adults from predation. *See, below.* Studies have shown that crabs living in areas with little or no underwater grasses suffer higher mortality.³

The inability of the crab population to rebound has led to severe harvest limitations placed on crabbers. In response, members of Congress from Maryland and Virginia have requested a federal fisheries disaster declaration for Bay crab fishermen. The Secretary of Commerce granted that request on September 22, 2008. The cause of the decline and the disaster declaration has largely been due to poor water quality and clarity in the Chesapeake Bay. Disaster relief will not address the systemic problems of the Bay or restore crabs to their natural abundance.

Until water quality improves, the blue crab population will not recover.⁴

II. Poor Water Quality Has Destroyed Underwater Bay Grasses

Submerged aquatic vegetation (SAV) or underwater grasses are a key indicator species of water quality in the Bay. SAV are found throughout the Bay and its tributaries. Because they are not subject to harvesting and grow best when water quality is good, SAV provide an excellent measure of Bay health.

SAV are of critical importance to the Bay because they provide food and shelter to a variety of Bay residents including crabs, fish, and waterfowl. Molting crabs hide from predators in the grass beds. Juvenile crabs, menhaden, and shad also use the grasses as cover. Zooplankton feed on decaying underwater grasses and in turn become food for larger organisms.

³ <http://www.chesapeakebay.net/crabs.aspx?menuitem=14700>

⁴ http://www.mdsg.umd.edu/issues/chesapeake/blue_crabs/about

Moreover, SAV improve Bay water quality by generating oxygen as a part of photosynthesis. The grasses trap and hold sediment suspended in the water keeping the water clear and preventing bottom dwellers like oysters from being smothered. SAV buffer shorelines and protect them from wave induced erosion. Most importantly, they take up nutrients like nitrogen and phosphorous.

Like terrestrial plants, SAV require light to grow.⁵ Consequently, for SAV to grow the water must be clear enough to allow sunlight to reach the bottom. Pollution entering the water from run-off and direct air borne deposition has reduced the growth of SAV in the Bay. Muddy stormwater run-off from construction on the land clouds the water so sunlight cannot reach the grasses. The run-off also carries nutrients. Increased algae growth due to excess nutrient run-off also blocks sunlight harming the grasses.⁶ Although SAV are sensitive to pollution, they can rebound quickly if water quality improves.⁷ Despite extensive efforts to replant SAV in the Bay, total acreage stands at approximately 40% of the Bay goal. Without improved water quality, SAV acreage will continue to remain diminished in the Bay leading to further losses of crabs and fish.

III. The Bay Oyster Fishery

Another critical Bay species, commercially, recreationally, and as an important part of the Bay ecosystem, is the oyster. According to Captain John Smith, oysters were so plentiful in the Bay in the 1600s that oyster reefs posed a threat to navigation. Such reefs provide habitat for countless Bay creatures including juvenile crabs and fish. Moreover, oyster larvae provide food to filter feeders like menhaden. As they mature, they become food to worms, mud crabs, blue crabs, some fish and birds.

Oysters were a tremendous source of income and food to humans. From the 1800s to the mid-1900s, the commercial oyster industry employed thousands of people catching, selling, shucking, and shipping oysters to market. Hundreds of skipjacks, bugeyes and schooners, sail powered oyster dredgers, as well as thousands of oyster tonging boats plied the waters of the Bays in search of the delectable oyster. The industry generated millions of dollars a year to the Bay economy. Until the mid-1980s the oyster was the leading commercial fishery in the Bay. Like the blue crab, Bay oysters spawned a rich cultural heritage.

In addition to their commercial and recreational value, oysters improve water quality because they are filter feeders. An individual adult oyster can pump over 50 gallons of water a day through its gills which strain out food, chemicals, nutrients, and sediment. This process cleans the water. Scientists believe that historically oysters were able to filter a volume equivalent to the Bay's volume, approximately 19 trillion gallons.

⁵ <http://www.mdsg.umd.edu/issues/chesapeake/SAV/>

⁶ <http://www.mdsg.umd.edu/issues/chesapeake/SAV/sav/index.php>

⁷ <http://www.chesapeakebay.net/baygrasses.aspx?menuitem=14621>

in less than a week.⁸ Today, it takes the remaining Bay oysters more than a year to do the same job.⁹

Unfortunately, overharvesting in the late 1800s and early 1900s significantly reduced the ranks of the Bay oyster. Harvest restrictions kept the population reduced but stable until the 1970s.¹⁰ Beginning in the 1960's disease began to severely deplete the stocks of this Bay icon. Today, the oyster population in the Bay has been estimated at between 1% and 4% of its historic numbers.¹¹ In addition to disease, poor water quality has limited the ability of the species to rebound.¹²

The small oyster reefs of today provide less habitat for juvenile oysters (spat) and other reef dwellers. Reduced numbers of worms and other invertebrates reduce the food supply to fish and blue crabs that live near the reefs. Moreover, due to their diminished size, oyster reefs are susceptible to being smothered by runoff-induced sediment.

Continuing development of the land surrounding the Bay and the resulting loss of forests have led to an ever increasing load of nutrients and sediment to the Bay. In addition to smothering by sediment, oysters are subject to depleted oxygen levels in the water they depend on to breathe. Unlike the blue crab and fish, oysters cannot move so when oxygen levels drop during the summer due to increased algae blooms caused by more nutrients, oysters either die or become stressed. Stressed oysters are more susceptible to disease.¹³

IV. Poor Water Quality Has Severely Harmed Bay Fish

Approximately 350 species of fish live in the Chesapeake Bay. Some species are year round residents. Others move out to the ocean for part of their life cycle, *e.g.*, menhaden and striped bass, or up freshwater tributaries of the Bay to breed, *e.g.*, shad. Menhaden and striped bass are of particular importance to the Bay - commercially, recreationally, and to the health of the Bay. The shad once was a signature species for the Bay. Spring shad runs provided the Bay's most valuable fishery for over two hundred years. Sadly, overfishing and poor water quality have severely depleted the species.

Menhaden, like oysters, are filter feeders that consume algae and other forms of plankton. This form of feeding removes excess nutrients that harm water quality in the Bay. Menhaden are a primary source of food for larger fish like striped bass and bluefish. Birds like bald eagles and ospreys also prey on menhaden.

⁸ <http://www.chesapeakebay.net/oysters.aspx?menuitem=19368>

⁹ Newell, R.I.E., 1988. Ecological changes in Chesapeake Bay: Are they the result of overharvesting the Eastern oyster (*Crassostrea virginica*)? In: M.P. Lynch and E.C. Krome (eds.), *Understanding the Estuary: Advances in Chesapeake Bay Research*. Chesapeake Research Consortium Publication 129 (CBP/TRS 24/88), 536-546 (hereafter Newell, 1998).

¹⁰ <http://www.mdsg.umd.edu/issues/chesapeake.oysters.history>

¹¹ (Newell, 1988): 2007 State of the Bay.

<http://www.cbf.org/site/DocServer/2007SOTBReport.pdf?docID=10923>, at p. 9, *see score*.

¹² *Id.*

¹³ <http://www.chesapeakebay.net/oysterharvest.aspx?menuitem=14701>

Moreover, menhaden comprise one of the oldest commercial fisheries on the Atlantic coast and one of the largest in the nation. During the last several years, the menhaden fishery located in the Chesapeake Bay at Reedville, Virginia, has reported the second largest catch of fish in the nation.¹⁴ The 2006 harvest of 376 million pounds was valued at over \$22.5 million. Unfortunately, like the blue crab, menhaden stocks have diminished in recent years. Scientists believe overfishing and poor water quality are factors in the decline.¹⁵

Historically, the most valuable fish in the Chesapeake Bay was the American shad. Native Americans living along the tidal tributaries of the Bay relied on this species for their survival. In the 1800s, almost 41,000 metric tons of shad were caught a year. Tragically, the Atlantic population has been significantly depleted and it no longer supports a commercial fishery. Maryland closed its commercial fishery in 1980 and Virginia did the same in 1984. While overfishing and dams blocking spawning runs contributed to the decline, poor water quality was a significant factor in the loss of this once flourishing fishery and remains an impediment to its return.¹⁶

A key Bay predator, striped bass or rockfish primarily feed on menhaden and anchovies. Thus, the numbers of those species must remain high for the striped bass population to remain strong and maintain balance in the Bay ecosystem. A pronounced drop in striped bass numbers could have adverse economic and food chain consequences.

The rockfish has been and remains the most popular commercial and recreational fish in the Bay. In fact, Maryland named it the state fish in 1965. Faced with a catastrophic collapse in the fishery, commercial and recreational fishing were banned in the Maryland portion of the Bay from 1985-90 and in Virginia during 1989.¹⁷ The dramatic decline of the population was due to several factors including overfishing and low dissolved oxygen in deeper parts of the Bay. As explained below, anoxic or hypoxic conditions in the Bay are caused by dying algae whose blooms are fostered by an overabundance of nitrogen and phosphorous in the water. Today, the rockfish population is at a high level. However, scientists are concerned about the adverse impacts of disease, water quality stresses, and low numbers of forage species.¹⁸

In sum, increased harvest pressure and poor water quality have led to historic declines in populations of blue crabs, fish, and oysters. However, restrictions on harvest limits have not led to population rebounds because of long term water quality impairments. Until water quality improves, Bay resources will not improve.

¹⁴ <http://www.chesapeakebay.net/atlanticmenhaden.aspx?menuitem=19375>

¹⁵ <http://www.chesapeakebay.net/atlanticmenhadenharvest.aspx?menuitem=14702>

¹⁶ <http://www.chesapeakebay.net/americanshadharvest.aspx?menuitem=15315>

¹⁷ <http://www.chesapeakebay.net/stripedbass.aspx?menuitem=19389>

¹⁸ <http://www.chesapeakebay.net/stripedbassharvest.aspx?menuitem=15316>

THE CHESAPEAKE BAY WATERMAN

Since colonial times, the Bay's bounty has been harvested by a unique water borne farmer known as a "waterman." While the term can refer to those who catch only one species, a typical Bay waterman will harvest several varieties of shell and fin fish depending upon the season. For example, a waterman may dredge for oysters in the winter but crab during the summer. Some crabbers will fish exclusively with wire pots or cages while others will use trot lines.

Unfortunately, the Bay's bounty has been greatly diminished over the years. Thus, it has become increasingly difficult to eke out a living on the water. The numbers of full time commercial watermen has dramatically declined since the mid-1900s. For example, in 1993 there were 3,858 commercial watermen in Virginia. Today, there are 2,980. While most watermen will admit that overharvesting has contributed in part to their plight, poor water quality has caused and continues to cause the greatest harm to commercial and recreational shell and fin fishing.

Sadly, poor water quality has led to reduced shellfish and fish stocks that have lead to greater restrictions on harvesting; further reducing the ability of the watermen and their families to survive. During the mid-1900s an average waterman could make enough money to own a home and a boat and raise a family. Today, the typical waterman barely makes minimum wage. The 2007 Bay-wide crab harvest of 43.5 million pounds is the lowest recorded since 1945.¹⁹

The loss of crabbing revenue has been especially difficult for small traditional fulltime watermen communities such as Guinea, Virginia; Smith and Hooper's Islands, Maryland; and Tangier Island, Virginia - their way of life passed down from father to son to grandson. The economies of these communities are almost wholly based on the seafood industry, and the blue crab fishery provides the bulk of their income. Three of these locations are remote islands where residents cannot easily transition to mainland-based jobs that may be available to displaced fishermen in other geographic areas. Moreover, these watermen have gear that is specifically designed to harvest blue crabs, not other commercial species. Thus, they cannot turn to other forms of fishing to offset the crabbing losses.

In response to the lack of income, many watermen are leaving their way of life to work on tug boats or as prison guards far from their homes and families. Due to government's unwillingness to act, a way of life and a valuable commercial and cultural resource is disappearing perhaps forever.

The impact of poor water quality has been equally felt by recreational fishermen and the sportfishing industry. The revenues derived by the states from recreational fishing licenses and taxes on gear and related expenses are significant. However, poor water quality can directly affect recreational fishing by harming prey for sportfish such as striped bass and blue fish in addition to direct impacts to the sport fish and their habitats.

¹⁹ 2008 Chesapeake Bay Blue Crab Advisory Report.

As sportfish stocks decline, so do public revenues associated with sportfishing and private sales of sportfishing gear.

THE CHESAPEAKE BAY AGREEMENTS – A HISTORY OF MISSED DEADLINE

As Bay oyster, crab, and fish populations declined, the federal government realized that something had to be done to improve water quality in the Bay or this natural treasure would be lost. In 1976, Congress directed U.S. EPA to undertake a comprehensive study of the Bay including water quality and its resources to determine how best to manage this national resource. 94 P.L. 116.²⁰ In accordance with this mandate, EPA created the Chesapeake Bay Program which developed approximately 100 research projects over seven years. In 1983, EPA published its “Framework for Action” which described the findings of the research and identified management strategies that could be utilized to restore the Bay. These findings and recommendations were further explained in a companion document released by EPA entitled “Chesapeake Bay Program Findings and Recommendations.”

In 1980, Congress passed the Chesapeake Bay Research and Coordination Act (U.S.C. § 3001-3007). In so doing, Congress found that the Chesapeake Bay “is one of the greatest natural resources of the United States of America.” The Act mandated that the Secretary of Commerce create an Office for Chesapeake Bay Research Coordination and created a research board comprised of members selected from the federal government, Maryland and Virginia. The board was to develop a research plan and coordinate federal research within the Bay area. Congress appropriated \$500,000 a year for four years to carry out these mandates.

At the same time, state governments also began to examine ways to restore and protect the Bay. In 1978, the Maryland-Virginia Chesapeake Bay Legislative Advisory Commission evaluated existing and proposed management structures and made recommendations for strengthening interstate ties and better coordinating the management of the Bay.²¹ After considering a number of alternatives, including direct federal involvement, the advisory commission recommended the establishment of a bi-state commission.

In 1980, Maryland and Virginia each adopted their own legislation recognizing and implementing an agreement to create the Chesapeake Bay Commission (the “Commission”) to coordinate interstate planning and programs.²² Pennsylvania signed similar legislation and joined the Commission in 1985. This “tri-state agreement” marked the beginning of ongoing interstate legislative efforts to protect the estuarine habitat of the Chesapeake Bay. The Commission includes fifteen legislators (five from each state), three natural resource cabinet secretaries and three citizen representatives,

²⁰ The referenced Public Law does not specifically mention this directive as the law is an appropriation to EPA. However, the Senate Appropriations Committee report does reference this directive.

²¹ <http://www.chesbay.state.va.us/history.html>

²² Maryland Natural Resources Code Ann. §8-301 (2003); Pennsylvania 32 P.S. §820.11, §820.12 (2004); Virginia Code §30-240 (2004).

one each from Maryland, Pennsylvania, and Virginia.²³ Senator Fowler and Secretary Murphy have both been chairmen and members of the Commission.

The Commission is a signatory to all the Bay Agreements and amendments beginning in 1987 and is a member of the Executive Council of the Chesapeake Bay Program.²⁴ The Commission acts as the legislative arm of the Bay Program and each state's representatives advise their respective legislatures.²⁵

The United States Environmental Protection Agency (on behalf of the United States), Maryland, Virginia, Pennsylvania and the District of Columbia signed the first Chesapeake Bay Agreement in 1983 (the "1983 Bay Agreement").²⁶ Former Governor Hughes signed the Agreement on the behalf of Maryland. The Agreement outlined a cooperative, voluntary approach to improve management of the Bay's resources. The 1983 Bay Agreement created an Executive Council to assess and oversee implementation of coordinated plans, to improve water quality and the living resources of the Bay, and to establish an implementation committee²⁷ to coordinate and evaluate management plans. The Executive Council later created several other committees²⁸ including a Principals' Staff Committee, a Scientific & Technical Advisory Committee, a Citizens Advisory Committee (CAC), and a Local Government Advisory Committee.²⁹

In 1987, a subsequent interstate agreement was signed by the United States, the three Bay states, the District of Columbia, and the Chesapeake Bay Commission.³⁰ (hereinafter referred to as the "1987 Bay Agreement"). In this agreement, the 1983 Bay Agreement was amended to include more specific quantitative goals and commitments. The most "critical element" of the 1987 Bay Agreement was the decision to reduce point and non-point nitrogen and phosphorous pollution loadings to the Bay by 40 percent by 2000. To reach this goal, the parties agreed to develop, adopt, and begin implementation of a basin-wide strategy by July 1988.

²³ <http://www.chesbay.state.va.us/history.html>

²⁴ The signing of the 1983 Bay Agreement, *see below*, is considered the genesis of the Chesapeake Bay Program which is broader than the CBP developed by US EPA in response to Congress' 1976 directive to evaluate Bay resources and develop management alternatives. Hereafter, reference to the Bay Program refers to this latter partnership.

²⁵ <http://www.chesbay.state.va.us/mission.html>

²⁶ <http://www.chesapeakebay.net/pubs/1983ChesapeakeBayAgreement.pdf>

²⁷ The Implementation Committee is responsible for implementing the policy decisions and technical studies of the Commission Executive Council and coordinating restoration and protection activities under the Bay Agreements and directives.

²⁸ <http://www.chesapeakebay.net/committee.htm>.

²⁹ The CAC assists the Executive Council Implementation Committee and participates in the work of the various subcommittees in implementing the Chesapeake Bay Agreement. Membership includes representatives from agriculture, business, conservation, industry, and civic groups. Since 1984, this group has provided a non-governmental perspective on the Bay cleanup effort and on how Bay Program policies affect citizens who live and work in the Chesapeake Bay Watershed. The CAC's by-laws provide that the purpose of the CAC is to represent the residents and stakeholders in the watershed. http://www.chesapeakebay.net/pubs/subcommittee/cac/CAC_Bylaws.pdf. The CAC was actively involved in drafting the Chesapeake 2000 Agreement.

³⁰ <http://www.chesapeakebay.net/pubs/199.pdf>.

Congress supported this agreement by enacting the federal Water Quality Act of 1987 and authorizing \$52 million in federal assistance for the Bay Program.³¹

In 1992, the United States and the other signatories reaffirmed their commitment to achieve “an overall 40 percent reduction of nitrogen and phosphorous entering the mainstem Chesapeake Bay by the year 2000” and thereafter.³² Senator Fowler signed an amendment on behalf of the Commission. The amended 1987 Bay Agreement reflects the critical importance of the tributaries in the ultimate restoration of Chesapeake Bay. The signatories specifically stated that they would “[r]educe and control point and nonpoint sources of pollution to attain the water quality condition necessary to support the living resources of the Chesapeake Bay *and its tributaries*.” *Id.* (emphasis in the original).

The parties also committed to develop and begin implementation of tributary-specific strategies by August 1993 to achieve the water quality requirements necessary to restore living resources in both the Bay mainstem and its tributaries. By 1998, it was clear that the 40% nutrient reduction goal of the 1983 and 1987 agreements would not be attained and the development of a new Bay Agreement was begun.

On June 28, 2000, the United States signed the interstate agreement Chesapeake 2000 Agreement (the “2000 Agreement”) with the Bay Commission, Maryland, Pennsylvania, Virginia, and the District of Columbia.³³ Mayor Williams signed the Agreement on behalf of the District of Columbia. The 2000 Agreement incorporated and reaffirmed the commitments made in 1983, 1987, and 1992 and outlined specific targets in five areas including the protection and restoration of the Bay’s living resources, vital habitat, and water quality. The 40 percent nutrient reduction goal was repeated. In addition, the 2000 Agreement stated that the signatories would reduce the nutrient and sediment pollution loads to the Bay and its tidal tributaries sufficiently to remove the Bay from the Clean Water Act section 303(d) impaired waters list by 2010.

In concert with the 2000 Agreement, Congress passed the Estuaries and Clean Water Act of 2000 (106 P.L. 457). This Act included the Chesapeake Bay Restoration Act of 2000 (the “2000 Act”).³⁴ The 2000 Act noted that there is “a need to expand Federal support for monitoring, management, and restoration activities in the Chesapeake Bay and the tributaries of the Bay in order to meet and further the original and subsequent goals and commitments of the Chesapeake Bay Program.”

Further, Congress reauthorized and amended Section 117 of the Clean Water Act “Chesapeake Bay.” 33 U.S.C. §1367.³⁵ In doing so, Congress made the following findings:

³¹ Feb. 4, 1987, Pub.L. 100-5, Title I, § 103, 101 Stat. 10.

³² http://www.chesapeakebay.net/content/publications/cbp_12507.pdf

³³ <http://www.chesapeakebay.net/pubs/chesapeake2000agreement.pdf>

³⁴ See 33 USC § 1267. The purpose of the 2000 Act was to, “to expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay; and to achieve the goals established in the Chesapeake Bay Agreement.”

³⁵ At this time, the funding authorization was increased to \$40 million. The Energy and Water Development Appropriations Bill for 2000 includes the recommendation for the full amount of the budget request for the Bay

(1) the Chesapeake Bay is a national treasure and a resource of worldwide significance;

(2) over many years, the productivity and water quality of the Chesapeake Bay and its watershed were diminished by pollution, excessive sedimentation, shoreline erosion, the impacts of population growth and development in the Chesapeake Bay watershed, and other factors;

(3) the Federal Government (acting through the Administrator of the Environmental Protection Agency), the Governor of the State of Maryland, the Governor of the Commonwealth of Virginia, the Governor of the Commonwealth of Pennsylvania, the Chairperson of the Chesapeake Bay Commission, and the mayor of the District of Columbia, as Chesapeake Bay Agreement signatories, have committed to a comprehensive cooperative program to achieve improved water quality and improvements in the productivity of living resources of the Bay;

(4) the cooperative program described in paragraph (3) serves as a national and international model for the management of estuaries; and

(5) there is a need to expand Federal support for monitoring, management, and restoration activities in the Chesapeake Bay and the tributaries of the Bay in order to meet and further the original and subsequent goals and commitments of the Chesapeake Bay Program.

In addition, Congress stated that the purposes of the Act were to “(1) expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay, and; (2) to achieve the goals established in the Chesapeake Bay Agreement.” *Id.* (emphasis added).

Congress has continually approved appropriations that fund the Chesapeake Bay Program and pursue the Bay Agreement goals.³⁶

Despite these findings and purposes, the water quality goal will be missed for a third time. As early as 2006, EPA announced that the goal of removing the Bay from the CWA § 303(d) list by 2010 would not be met. 2006-2011 EPA Strategic Plan, *Charting Our Course*, Subobjective 4.3.4, pg. 98.³⁷ That conclusion has been repeated several times since, *see, e.g.*, Chesapeake Bay Commission Meeting, January 4, 2007; U.S. EPA Chesapeake Bay Program Report to Congress “Strengthening the Management, Coordination, and Accountability of the Chesapeake Bay Program.” July 2008, Appendix D.

Program. Additionally, the Energy and Water Development Appropriations Bill for 2000 includes the recommendation for the full amount of the budget request for the Bay Program. *See* Committee on Appropriations, 106th Congress 1st Session. Report 106-253, July 23, 1999.

³⁶ For example, in 2006 Congress approved a \$20.75 million earmark for the Bay Program. *Available at:* http://www.senate.gov/pageloc/doc/063005_interior>06>senate>pass?somd.html

³⁷ http://www.epa.gov/ocfo/plan/2006/entire_report.pdf

CLAIMS

I. The Administrator Has Failed to Comply With the Clean Water Act

Section 117 of the Clean Water Act (CWA) provides:

(g) Chesapeake Bay Program

(1) Management strategies

The Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain –

(A) the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed.

(B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem; ...³⁸

33 U.S.C. § 1267(g)(1)(A)-(g)(1)(B). This section was re-codified as part of the Estuaries and Clean Water Act of 2000, Title II Chesapeake Bay Restoration. One of the explicit purposes of the Restoration title was “to achieve the goals established in the Chesapeake Bay Agreement.” Pub.L. 106-457, Title II, Sec. 202(b)(2), Nov. 7, 2000, 114 Stat. 1967.

The Bay Agreement goal for reducing nutrient pollution by 40 percent by the year 2000 was set in 1987. It was reaffirmed in 1992. It was not met by the 2000 deadline. Under the 2000 Agreement, the signatories altered this goal by committing to improving water quality so that the Bay could be removed from the Clean Water Act impaired waters list by 2010. EPA has admitted that the 2010 goal will not be met.³⁹

The failures of the Administrator to address on-going concerns about the ability of the United States and the other Bay Agreement signatories have been documented in several reports by EPA's Office of Inspector General and Congress' General Accounting Office.⁴⁰ Moreover, the living resources of the Bay and its water quality have not been

³⁸ There are three other goals identified by the CWA: toxics reduction; habitat restoration and wetlands protection; and: restoration for living resources. *e.g.*, oysters and grasses. The majority of these goals were also not be met.

³⁹ http://www.epa.gov/ocfo/plan/2006/entire_report.pdf. See also Chesapeake Bay Commission 2007 Annual Report at p. 7.

<http://www.chesbay.state.va.us/Publications/CBC%20annual%20report%202007.pdf>.

⁴⁰ “Congressionally Requested Review of EPA Region III's Oversight of State National Pollutant Discharge Elimination System Permit Programs.” EPA Office of Inspector General, Report No. 2005-S-00002, October 29, 2004; “Chesapeake Bay Program: Improved Strategies are Needed to Better Assess, Report and Manage Restoration Progress.” GAO-06-96, July 12, 2006; “Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources, EPA Office of the Inspector General, Report No. 2007-P-00004 and US Department of Agriculture Report No. 50601-10-Hq, November 20, 2006; “Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay.” EPA Office of the Inspector General, Report No. 2007-P-00031, September 10, 2007.

restored and continue to decline, all to the detriment of those who have signed this notice of intent letter.

Congress required that the Administrator achieve the goals of the Bay Agreements, not merely develop plans and begin implementation. Pub.L. 106-457, Title II, Sec. 202(b)(2), Nov. 7, 2000, 114 Stat. 1967. However, the Administrator has failed to comply with that directive. Accordingly, the Administrator is subject to suit pursuant to Section 505(a)(2) of the CWA. 33 U.S.C. § 1365(a)(2).⁴¹

II. The Administrator Has Failed to Comply With the Administrative Procedure Act

The Administrative Procedure Act allows citizens to challenge federal agency decisions that are unlawfully withheld or unreasonably delayed. 5 U.S.C. § 706. Actions may also be challenged as arbitrary and capricious. *Id.* Here, the Administrator has unreasonably failed to meet the nutrient pollution reduction and water quality goals set forth in the Chesapeake Bay Agreements. The failure to act was arbitrary and capricious.

Moreover, federal agency actions which violate the terms of the Bay Agreements are “not otherwise in accordance with the law” and are per se arbitrary and capricious under the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). *See, Humane Society v. Glickman*, 217 F.3d 882 (D.C. Cir. 2000)(holding that federal agency action in violation of Migratory Bird Treaty Act violates the “otherwise not in accordance with law” provision of the APA).

Because the Administrator has failed to comply with the Clean Water Act and the Bay Agreements he has also violated the Administrative Procedure Act. Thus, the United States is subject to suit. 5 U.S.C. §§ 701, 702.

III. The Administrator Has Failed to Comply With the Chesapeake Bay Agreements

The Chesapeake Bay Agreements including the 2000 Agreement are interstate compacts among the signatory states and the United States. The Bay Agreements address matters appropriate for Congressional legislation, increase the power of the states over the federal government, and were ratified by Congress. Thus, they may be enforced pursuant to federal law. *Cuyler v. Adams*, 449 U.S. 433, 438 (1981)(“congressional

“Despite Progress, EPA Needs to Improve Oversight of Wastewater Upgrades in the Chesapeake Bay Watershed,” EPA Office of the Inspector General, Report No. 08-P-0049, January 8, 2008; “EPA Needs to Better Report Chesapeake Bay Challenges, A Summary Report,” EPA Office of the Inspector General, Report No. 08-P-0199, July 14, 2008.

⁴¹ An example of the broad powers Congress has granted to the Administrator is the emergency authority provided in Section 504 of the Clean Water Act. That provision allows the Administrator to undertake a judicial action to eliminate an “imminent and substantial endangerment to the health and welfare of persons where such endangerment is to the livelihood of such persons, such as the inability to market shellfish...” 33 U.S.C. § 1364. Undoubtedly such conditions exist in the Chesapeake Bay today. Accordingly, the Administrator could take such action as appropriate to eliminate this threat to public health and the welfare.

consent transforms an interstate compact within [the Compact] Clause into a law of the United States”).

The Bay Agreements were expressly approved by Congress. The Clean Water Act specifically states that Congress consents to the states entering into “agreements or compacts, ..., for (1) cooperative effort and mutual assistance for the prevention and control of pollution....” 33 USC § 1253(b)(1).⁴² The Clean Water Act defines the “Chesapeake Bay Agreement” as the “formal, voluntary agreements executed to achieve the goal of restoring and protecting the Chesapeake Bay ecosystem and the living resources of the Chesapeake Bay ecosystem and signed by the Chesapeake Executive Council.” 33 U.S.C. § 1267(a)(2). Moreover, the Bay Agreements are cooperative efforts to control pollution in the Bay. Thus, the Bay Agreements have been expressly approved by Congress.

“[C]onsent may be implied, and is always to be implied when Congress adopts particular act by sanctioning its objects and aiding in enforcing them...” *Virginia v. Tennessee*, 148 U.S. 503, 543-44(1893). Here, Congress sanctioned the Bay Agreements and has provided “aid” to support them. Also, Congress’ stated findings and purposes amending section 117 of the Clean Water Act make it clear that Congress implicitly approved of the Bay Agreements and full participation by the United States in those agreements. Estuaries and Clean Water Act of 2000 (106 P.L 457) and Chesapeake Bay Restoration Act of 2000 (“2000 Act”).⁴³

Congressional approval of federal involvement in the Bay Agreements was provided in the Chesapeake Bay Restoration Act of 2000 that allocated further funds in support of the purposes of the “Chesapeake Bay Agreement”.⁴⁴ US EPA, the Department of Defense, and the Department of the Army have signed memoranda of understanding and cooperative agreements designed to uphold and implement the directives and goals of the various Chesapeake Bay Agreements. Hence, the federal government has accepted the Agreements.

Thus, while Congress did not use the word “consent” in the Chesapeake Bay Restoration Act of 2000 or sign the Agreement, it most certainly implied its consent to the cooperative Chesapeake Bay Agreements to prevent and control pollution to the Bay. Thus, the Bay Agreements are enforceable federal laws. See *Green v. Biddle*, 21 U.S. (1823); *Virginia v. Tennessee*, *supra*.

The Bay Agreements were signed for the benefit of those who rely on the Bay for their livelihood such as the Maryland and Virginia watermen who are signatories to the

⁴² The statute also provides that “[n]o such agreement or compact shall be binding or obligatory upon an State or party thereto unless and until it has been approved by the Congress.” *Id.* As explained, Congress has approved the Chesapeake Bay Agreements.

⁴³ See 33 USC § 1267. The purpose of the 2000 Act was to, “to expand and strengthen cooperative effort to restore and protect the Chesapeake Bay; and to achieve the goals established in the Chesapeake Bay Agreement.”

⁴⁴ Public Law 106-457. 106th Congress (November 7, 2000) codified as 33 USC § 1267. Section 117.

notice letter. In addition, the signatories to the Bay Agreements specifically recognized that they must take action to protect public health and the environment.

For example, the 2000 Agreement makes the following statements:

-For almost two decades, we, the signatories to these agreements, have worked together as stewards to ensure the public's right to clean water and a healthy and productive resource. We have sought to protect the health of the public that uses the Bay and consumes its bounty. Preamble.

- Our efforts to preserve the integrity of this natural infrastructure will protect the Bay's waters and living resources and will ensure the viability of human economies and communities that are dependent upon those resources for sustenance, reverence and posterity. Vital Habitat Protection and Restoration, pg. 4.

As a signatory to that agreement and its predecessors, the United States has failed to honor its commitments to achieve and maintain the water quality goals of reducing nutrient pollution by 40% and removing the Bay from the Section 303(d) list. Thus, the signatories of this notice of intent letter may sue the United States to enforce the terms of the Bay Agreements - specifically the water quality and living resource goals identified as early as 1987.

RELIEF

The signatories to this notice of intent letter ask the United States to take, among other things, the following actions:

1. Comply with the statutory requirements of Section 117 (g) of the Clean Water Act by:
 - a. Completing and implementing plans that will achieve and maintain the nutrient and sediment reduction goals of the Chesapeake 2000 Agreement;
 - b. Developing legislative, regulatory, and funding mechanisms, *see* Executive Council Directive, No. 04-2, to ensure that the nutrient reduction plans not only achieve but maintain necessary reductions;
 - c. Creating a Bay wide Total Maximum Daily Load (TMDL) by 2010. The TMDL must require strict deadlines and reasonable assurances, along with the imposition of sanctions for the failure to meet the requirements of the TMDL;
 - d. Implementing the Bay wide TMDL by 2011 with full implementation by 2015; and

- e. Requiring the states and federal agencies within the Chesapeake Bay watershed to implement plans to achieve and maintain the nutrient and sediment reduction goals of the Chesapeake 2000 Agreement.
- 2. Comply with the water quality and living resource goals of the Chesapeake 2000 Agreement by, among other things:
 - a. Ensuring that all partners to the Chesapeake 2000 Agreement comply with its terms;
 - b. Developing legislative, regulatory and funding mechanisms to insure that the nutrient reduction plans not only achieve but maintain necessary reductions.
- 3. Require other federal agencies to play a more active role in controlling non-point pollution. In addition, ensure that the White House Office of Management and Budget immediately releases the 2008 Farm Bill funds designated for the Chesapeake Bay.
- 4. Design a program to assist watermen to continue working on the water by providing funding and expertise to help, for example, develop cooperative associations, build and operate oyster hatcheries, and promote aquaculture.
- 5. The Administrator should exercise his emergency powers pursuant to Section 5 of the Clean Water Act.
- 6. Provide such other relief as is necessary and appropriate to achieve the water quality goals of the Clean Water Act and the Bay Agreements. For example: prevent backsliding on point source reductions via strong point source permits and enforcement; target agriculture conservation dollars by practice and geography; strictly regulate nitrogen oxide emissions from power plants include year round controls; require pollution loads from new development be consistent with TMDLs; and adopt stringent loading limits, pollution prevention requirements, and TMDL linkage in all municipal separate storm sewer system permits.

CONCLUSION

Congress has recognized the Chesapeake Bay as a national treasure worthy of restoration and preservation. Congress empowered EPA to take a leadership role in cleaning up the Bay. EPA recognized its Congressional mandate by signing three Bay Agreements spanning 25 years, yet, water quality in the Bay has not improved. It is time for EPA to take the action Congress and the citizens of the United States asked it to take. Accordingly, we ask to meet with the Administrator or his designate to discuss this matter at his earliest convenience.

Sincerely,


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Amy E. McDonnell, Esq.
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Counsel for

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Secretary Murphy, Mayor Williams, the
Virginia State Waterman's Association, the
Maryland Watermen's Association, the
Maryland Saltwater Sportfishing
Association, and the Chesapeake Bay
Foundation, Inc.

Cc:
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Attachment

Fowler v. EPA
Complaint
January 5, 2009

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

C. BERNARD FOWLER, 3585 Dares Beach Road,
Prince Fredrick, MD 20678,
HARRY R. HUGHES, 24800 Pealiquor Road,
Denton, MD 21629,
W. TAYLOE MURPHY, JR., 174 Court Circle,
Warsaw, VA 22572,
ANTHONY A. WILLIAMS, 1001 19th St., North
Arlington, VA 22209,
CHESAPEAKE BAY FOUNDATION, INC.,
a non-stock corporation, 6 Herndon Avenue,
Annapolis, MD 21403,
**MARYLAND SALTWATER
SPORTSFISHERMAN'S ASSOC., INC.**,
a non-stock corporation, 8461-C Ft. Smallwood Road,
Pasadena, MD 21122,
MARYLAND WATERMEN'S ASSOC., INC.,
a non-stock corporation, P.O. Box 436,
Chester, MD 21619,
and
VIRGINIA STATE WATERMAN'S ASSOC., INC.,
a non-stock corporation, 92 Teal Way,
Heathsville, VA 22473,

Plaintiffs,

v.

**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY and
STEPHEN L. JOHNSON,**
**Administrator, United States Environmental
Protection Agency, Ariel Rios Building,**
1200 Pennsylvania Avenue, N.W.,
Washington, DC 20460

On behalf of

THE UNITED STATES OF AMERICA,

Defendants.

**CIVIL ACTION No.
1:09-cv-00005-CKK**

COMPLAINT

INTRODUCTION

1. The Honorable C. Bernard Fowler, the Honorable Harry R. Hughes, the Honorable W. Tayloe Murphy, Jr., the Honorable Anthony A. Williams, the Chesapeake Bay Foundation, Inc., the Maryland Saltwater Sportsfisherman's Association, Inc., the Maryland Watermen's Association, Inc., and the Virginia State Waterman's Association, Inc., (hereinafter "Plaintiffs") bring this action pursuant to the Clean Water Act (CWA), 33 U.S.C. §1365(a)(2), the Administrative Procedure Act (APA), 5 U.S.C. §§ 551, *et seq.*, the Chesapeake Bay Agreements, and the Compact Clause of the United States Constitution, U.S. Const. art. I, §10, cl. 3, against Defendants the United States Environmental Protection Agency (EPA) and Stephen L. Johnson, Administrator, on behalf of the United States of America, for their failure to perform obligatory duties and failure to abide by the terms and conditions of the CWA, the APA, and the Chesapeake Bay Agreements. Plaintiffs seek declaratory and injunctive relief and costs of litigation, including attorney and expert witness fees.

2. The Chesapeake Bay (the Bay) is North America's largest and most biologically diverse estuary, home to more than 3,600 species of plants, fish and animals. For more than 300 years, the Bay and its tributaries have sustained the region's economy and defined its traditions and culture. It is a resource of extraordinary productivity, worthy of the highest levels of protection and restoration. Chesapeake Bay 2000 Agreement.

3. The failure of the United States to comply with the Chesapeake Bay Agreements and the CWA has led to the continued degradation of water quality in the Chesapeake Bay. This failure to act has harmed the Bay's natural resources and the citizens of the Chesapeake

Bay region who enjoy and use the Chesapeake Bay and its rivers and streams and make living from its natural resources.

4. The degradation of water quality in the Chesapeake Bay and its rivers and streams has harmed and will continue to harm the cultural, economic, and quality of life interests of all Chesapeake Bay watermen and their families.

5. The degradation of water quality in the Chesapeake Bay and its rivers and streams has harmed and will continue to harm the aesthetic, educational, recreational, and restoration interests of the individual plaintiffs and the organizational plaintiffs and their members.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction of this action pursuant to 33 U.S.C. § 1365(a)(2) and 28 U.S.C. § 1346(a)(2).

7. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(b) because EPA headquarters are located in Washington, D.C., a substantial part of the events or omissions giving rise to the claims occurred in Washington, D.C., and CBF maintains an office in the district at 725 8th St., S.E., Washington, DC.

8. On October 29, 2008, Plaintiffs provided written notice as required by the CWA, 33 U.S.C. § 1365(b), to the United States of its violations of the CWA, the APA, and the Chesapeake Bay Agreements and Plaintiffs' intention to file suit. The Notice Letter was provided to the Attorney General, the Administrator of EPA, and the Regional Administrator of EPA Region III. The United States, including but not limited to the EPA, has not commenced or diligently prosecuted a court action to redress the violations alleged in the complaint. More than the requisite 60 days have passed since the Notice Letter was issued and this action may now go forward.

PARTIES

9. Defendant Stephen L. Johnson is the Administrator of EPA. Defendant EPA, is the federal agency responsible for enforcing the environmental laws of the U.S. The EPA is also the signatory to the Chesapeake Bay Agreements on behalf of the United States. Thus, the United States is also a Defendant to this action.

10. The Honorable C. Bernard Fowler is a former Maryland State Senator from Prince Fredrick, Maryland. During the 1950s and 60s, Senator Fowler was a crabber and fisherman on his home river the Patuxent. Senator Fowler has been a member of the Chesapeake Bay Commission (the Commission) since the mid 1980s. He signed the 1992 amendment to the 1987 Bay Agreement as Chairman of the Commission. Senator Fowler is currently the Maryland citizen representative to the Commission.

11. The Honorable Harry R. Hughes was the Governor of Maryland from 1979 to 1987. He currently resides in Denton, Maryland. Governor Hughes signed the historic 1983 Chesapeake Bay Agreement, the first interstate compact between the Bay states, the District of Columbia, and the United States designed "to improve and protect the water quality and living resources of the Chesapeake Bay estuarine systems."

12. The Honorable W. Tayloe Murphy, Jr., is an attorney in Warsaw, Virginia, who resides on a farm along the shores of the Potomac River. He was the Secretary of Natural Resources for the Commonwealth of Virginia from 2002 to 2006. During a portion of that period he was Chairman of the Principals' Staff Committee of the Chesapeake Bay Executive Council (defined below). Secretary Murphy was a Delegate to the Virginia General Assembly from 1982 to 2000. He was an instrumental leader behind the General Assembly's passage of both the Chesapeake Bay Preservation Act and the Virginia Water Quality

Improvement Act. Secretary Murphy was Vice Chairman of the Chesapeake Bay Commission in 1987, three times the Chairman (1988, 1991, and 1997), and was a member of the Commission for 22 years.

13. The Honorable Anthony A. Williams was the mayor of Washington, D.C., from 1997 to 2007. From 2000 to 2002 he chaired the Chesapeake Bay Executive Council. Mayor Williams is a strong advocate for the clean up of the Anacostia and Potomac Rivers. He signed the Chesapeake Bay 2000 Agreement on behalf of the District of Columbia. When he signed the Agreement, Mayor Williams believed that the goal of removing the Bay and its tidal tributaries from the CWA Section 303(d) impaired waters list by 2010 was a binding commitment of all the signatories including the United States.

14. Plaintiff Chesapeake Bay Foundation, Inc. (CBF) sues on its own behalf and on behalf of its members. The CBF is a 501(c)(3), non-stock, Maryland corporation with offices in, among other places, the District of Columbia; Annapolis, Maryland; Harrisburg, Pennsylvania; and Richmond, Virginia. The CBF is the largest conservation organization dedicated solely to protecting the Chesapeake Bay watershed and its tributaries. Since its founding over 40 years ago, its goal has been to improve water quality in the Bay and its tributaries by reducing pollution.

15. The CBF is the only independent organization dedicated solely to restoring and protecting the Bay and its tributary rivers. Its goal is to improve water quality by reducing pollution including nitrogen and phosphorous. The CBF's vision for the future is a restored Bay with healthy rivers and clean water; sustainable populations of crabs, fish, and oysters; thriving water-based and agricultural economies; and a legacy of successful protection and restoration of the Chesapeake Bay ecosystem for our children and grandchildren.

16. The CBF has approximately 200,500 total members and nearly 12,000 active adult and student volunteers. Approximately 5,000 members reside in the District of Columbia, 98,800 in Maryland, 13,800 in Pennsylvania, and over 66,000 in Virginia. The majority of CBF's remaining members reside in the states of Delaware, New York, and West Virginia.

17. The CBF operates fifteen (15) educational programs that conduct student leadership projects, in-the-field educational experiences, and other activities in and around the Chesapeake Bay. The CBF operates several marine vessels in the Chesapeake Bay and its tributaries. During the last fiscal year, CBF spent approximately \$4.3 million on these educational programs. The Defendants' failure to comply with the CWA, APA, and the Chesapeake Bay Agreements harms water quality and natural resources within the Bay and its tributaries harming CBF's ability to conduct these educational programs.

18. The CBF also conducts numerous advocacy and restoration programs within the Chesapeake Bay watershed designed to improve water quality in the Bay and its tributaries such as working with farmers to reduce runoff from agriculture, planting buffers along rivers and streams, and growing and planting oysters and underwater grasses. Over the previous fiscal year, CBF spent approximately \$6.5 million on these programs in the Bay region. The Defendants' failure to comply with the CWA, APA, and the Chesapeake Bay Agreements harms water quality and natural resources within the Bay and its tributaries harming CBF's ability to conduct these restoration programs.

19. The Maryland Saltwater Sportsfisherman's Association, Inc. (MSSA) is devoted to protecting and enhancing recreational fishing and conserving marine resources. The MSSA is the voice for more than 7,000 recreational anglers in the Chesapeake Bay and mid-

Atlantic region. The Defendants' failure to comply with the CWA, APA, and the Chesapeake Bay Agreements harms water quality and natural resources within the Bay its tributaries and thus harms the ability of MSSA's members to fish and conserve marine resources. The MSSA sues on behalf of its members.

20. The Maryland Watermen's Association, Inc. (MWA) is comprised of the various waterman groups on both Maryland's eastern and western shores, including Smith Island. MWA is a Maryland corporation whose members make a living crabbing, fishing, and harvesting oysters in the Chesapeake Bay and its tributaries. The Defendants' failure to comply with the CWA, APA, and the Chesapeake Bay Agreements harms water quality and natural resources within the Bay and its tributaries and thus harms the ability of MWA's members to crab, fish, oyster, and make a living. The MWA sues on behalf of its members.

21. The Virginia State Waterman's Association, Inc. (VSWA) is comprised of various waterman groups on both Virginia's eastern and western shores, including Tangier Island. Those groups are: Virginia Watermen's Association; Eastern Shore Watermen's Association; Tangier Watermen's Association; Upper River Watermen's Association; Tappahannock Rivers Watermen's Group; York River/Croaker Landing Working Waterman's Association and Coastal Virginia Waterman's Association. The VSWA is a Virginia corporation whose members make a living crabbing, fishing, and harvesting oysters in the Chesapeake Bay and its tributaries. The Defendants' failure to comply with the CWA, APA, and the Chesapeake Bay Agreements harms water quality and natural resources within the Bay and its tributaries and thus harms the ability of VSWA's members to crab, fish, oyster, and make a living. The VSWA sues on behalf of its members.

22. The individual plaintiffs and the organizational plaintiffs' members use and enjoy the Chesapeake Bay and its tributary rivers into which pollutants have and continue to be discharged causing harm to the Plaintiffs. The individual plaintiffs and the organizational plaintiffs' members reside near and enjoy waters within the Bay Watershed for recreation, fishing, swimming, kayaking, boating, wildlife viewing, and scientific study. The Administrator and the United States were charged by Congress and the Chesapeake Bay Agreements to improve water quality and living resources within the Bay and its tributaries. The failure of the Administrator and the United States to comply with the CWA, the APA, and the Chesapeake Bay Agreements has and continues to adversely affect and irreparably harm the aesthetic, conservation, economic, educational, recreational, and scientific interests of these individuals, organizations, and members, for which harm they have no adequate remedy at law. The Plaintiffs and their respective members will continue to be harmed until the Administrator and the United States fully comply with the CWA, the APA, and the Chesapeake Bay Agreements. The relief sought herein will redress the harm to Plaintiffs.

FACTS

The Chesapeake Bay is a National Treasure

23. The Chesapeake Bay is the largest estuary in the United States.

24. The Chesapeake Bay begins at the mouth of the Susquehanna River in Pennsylvania and Maryland and enters the Atlantic Ocean approximately 200 miles south between Cape Henry and Virginia Beach, Virginia.

<http://www.chesapeakebay.net/factsandfigures.aspx?menuitem=14582>.

25. The Chesapeake Bay watershed – the land area that contributes water to the Bay - covers 64,000 square miles from Cooperstown, New York to Virginia Beach, Virginia.

Portions of the watershed are found in Delaware, Maryland, New York, Pennsylvania, Virginia, Washington, D.C., and West Virginia. *Id.*

26. Historically, numerous Native American tribes lived along the shores of the Bay and its tributaries surviving off the fertile land and the abundant natural resources of the

27. Captain John Smith and members of the Virginia Land Company explored the reaches of the Bay during 1607-09. Smith reported finding fish so plentiful that they could be caught in frying pans and speared with swords. Oysters existed in such large numbers that they created hazards to navigation.

28. Since the founding of Jamestown, Virginia, the Chesapeake Bay has been a tremendously important economic engine for the region. Historically, tons of crabs, fish, and oysters were harvested from the Bay annually. Numerous other species of Bay wildlife have been caught and sold to feed the citizens of the Mid-Atlantic region.

29. The quality of the water in the Bay and its tributaries degraded as the population in the region grew. <http://www.chesapeakebay.net/bayhistory.aspx?menuitem=14591>. The primary culprits for the degradation in water quality are nitrogen, phosphorous, and sediment pollution. In general, nitrogen and phosphorus are nutrients essential for the growth of life, both aquatic and terrestrial. In over abundance, however, these pollutants lead to the excessive growth of algae that die and decay – a process that blocks sunlight and sucks sustaining oxygen from the water.

<http://www.chesapeakebay.net/baypressures.aspx?menuitem=13959>.

30. As water quality in the Bay and its tributaries degraded, the amount of underwater grasses essential to the sustainability of crab and fish populations declined. In addition

water quality contributed to a dramatic loss of oysters and other aquatic life critical to healthy Bay. <http://www.chesapeakebay.net/nutrients.aspx?menuitem=14690>.

31. Poor water quality and the consequential loss of crabs, fish, and oysters directly harmed and continues to harm commercial and recreational fishing.

32. Congress has recognized that the Chesapeake Bay is a “national treasure and resource of worldwide significance.” Chesapeake Bay Restoration Act of 2000, Nov. 7, 2000, P.L. 106-457, Title II, § 202, 114 Stat. 1967. The restoration and preservation of the Chesapeake Bay is essential for a healthy and vibrant economy. The ports of Baltimore and Hampton Roads provide thousands of jobs and generate millions of dollars in revenue. <http://www.chesapeakebay.net/factsandfigures.aspx?menuitem=14582>. The town of Reedville, Virginia, on the Bay’s western shore consistently records the second largest catch of fish in the nation. The economic value of the Bay has been estimated at well over a trillion dollars.

33. The Chesapeake Bay region is home to approximately 17 million people many of whom rely on the Bay and its tributaries as not only a source of income but also as a place to recreate and commune with nature – a priceless commodity. *Id.* Moreover, some of our nation’s most treasured historical places are located within close proximity of the Chesapeake Bay and its tributaries – Antietam (Potomac River), Cooperstown (Susquehanna), Jamestown and Williamsburg (James River), Yorktown (York River), and Washington, D.C. (Potomac and Anacostia Rivers).

The Demise of the Blue Crab

34. Perhaps no other creature best exemplifies the Chesapeake Bay than the blue crab, *Callinectes* (“beautiful swimmer”) *sapidus* (“savory”). Blue crabs are aggressive predators

and a key indicator species of the Bay's health. They comprise one of the most valuable commercial and recreational fisheries in the Bay. Blue crabs are a critical link in the Bay's food web – without the blue crab, the Bay as we have known it for centuries would not exist. <http://www.chesapeakebay.net/bluecrab.aspx?menuitem=19367>.

35. Blue crabs feed on plankton, fish, and thin shelled bivalves, among other things. Blue crabs are also prey for other fish, birds, and other blue crabs. In fact, crabs comprise a large portion of the juvenile diet of other key Bay species such as the striped bass (rockfish), a linchpin of a huge commercial and recreational fishery. *Id.* People also enjoy eating blue crabs. Apart from the commercial fishery, citizens of the Bay region, including Plaintiffs, enjoy catching crabs as a recreational pastime.

36. The blue crab has been at the apex of the Bay's commercial fisheries for more than a half century. Over one-third of the nation's blue crab harvest comes from the Chesapeake Bay. *Id.* The average commercial harvest between 1968 and 2005 was about 100 million pounds. <http://www.chesapeakebay.net/crabs.aspx?menuitem=14700>. The commercial blue crab harvest in 2000 was valued at approximately \$55 million. *Id.* Since the 1990's, however, blue crab landings have significantly decreased despite increased crabbing effort. The recreational crab fishery also provides a financial off-set for Bay residents – catching crabs provides an inexpensive meal.

37. Given the public's love of the blue crab and its financial importance, the crab has become an icon of the Bay region. The numbers of blue crabs within the Bay have fallen dramatically within the last decade dropping from 680 million in 1997 to 283 million in 2008. According to the most recent winter crab survey, the population of catchable crabs in the Bay is estimated to be about 120 million crabs – one of the lowest in history. *Id.*

38. In 2007, eighty-eight percent of Chesapeake Bay waters had levels of dissolved oxygen below that established by EPA as sufficient for healthy aquatic life and as required by the District of Columbia, Maryland, and Virginia. “2007 Chesapeake Bay Health and Restoration Assessment,” Chesapeake Bay Program, March 2008 (2007 Assessment). http://www.chesapeakebay.net/content/publications/cbp_26038.pdf. Low oxygen levels drive blue crabs from their preferred habitat and kill many of the small bottom organisms on which the blue crabs feed. The low dissolved oxygen conditions caused by excessive levels of nitrogen and phosphorus are the primary reason large sections of the Bay have become unsuitable as blue crab habitat.

39. Moreover, water clarity in the Bay has been decreasing. In 2007, only 12% of the Bay had acceptable water clarity. *Id.* Poor water clarity is caused by algae blooms fed by nitrogen and phosphorus pollution as well as sediment pollution. Limited water clarity has reduced the amount of underwater grasses necessary to protect juvenile crabs, molting crabs, and adults from predation. Studies have shown that crabs living in areas with little or no underwater grasses suffer higher mortality.

40. The inability of the crab population to rebound has forced crabbers to endure severe harvest limitations. In response, members of Congress from Maryland and Virginia requested a federal fisheries disaster declaration for Bay crab fishermen. The Secretary of Commerce granted that request on September 22, 2008.

41. The decline and the disaster declaration have resulted largely from poor water quality and clarity in the Chesapeake Bay. Disaster relief will not address the systemic problems of the Bay or restore crabs to their natural abundance. Until water quality improves, the blue crab population will not recover.

Poor Water Quality Has Destroyed Underwater Bay Grasses

42. Underwater grasses or submerged aquatic vegetation are a key indicator species of water quality in the Bay. Underwater grasses are found throughout the Bay and its tributaries. Because they are not subject to harvesting and grow best when water quality is good, underwater grasses provide an excellent measure of Bay health.

<http://www.chesapeakebay.net/baygrasses.aspx?menuitem=14621>.

43. Underwater grasses are of critical importance to the Bay because they provide food and shelter to a variety of Bay residents including crabs, fish, and waterfowl. Mollusks and crabs hide from predators in the grass beds. *Id.* Juvenile crabs, menhaden, and shad also use the grasses as cover. Zooplankton feed on decaying underwater grasses and in turn become food for larger organisms. *Id.*

44. Moreover, underwater grasses improve Bay water quality by generating oxygen as a part of photosynthesis. The grasses trap and hold sediment suspended in the water, keeping the water clear and preventing bottom dwellers like oysters from being smothered. Underwater grasses can buffer shorelines and protect them from wave induced erosion. Importantly, they utilize nutrients like nitrogen and phosphorus as they grow. *Id.*

45. Like terrestrial plants, underwater grasses require light to grow. Consequently, for underwater grasses to grow the water must be clear enough to allow sunlight to reach the bottom. Pollution entering the water from run-off and direct air borne deposition has reduced the growth of underwater grasses in the Bay. Sediment-laden stormwater run-off from land clouds the water so sunlight cannot reach the grasses. This run-off also carries nitrogen and phosphorus pollution, providing fuel for increased algae growth which also blocks sunlight. *Id.*

46. Although underwater grasses are sensitive to pollution, they can rebound quickly if water quality improves. Despite extensive efforts to replant underwater grasses in the Bay, total acreage stands at approximately 35% of the restoration goal set in the Chesapeake 2000 Agreement. 2007 Assessment. Without improved water quality, underwater grass acreage will continue to remain diminished in the Bay and its rivers leading to further losses of crabs and fish.

Poor Water Quality Prevents the Bay Oyster Fishery From Recovering

47. The oyster is another critical Bay species; commercially, recreationally, and as an important part of the Bay ecosystem. Oysters were so plentiful in the Bay in the 1600s that oyster reefs posed a threat to navigation.

<http://www.chesapeakebay.net/oysterharvest.aspx?menuitem=14701>. Oyster reefs provide habitat for countless Bay creatures including juvenile crabs and fish.

<http://www.chesapeakebay.net/aquaticreefs.aspx?menuitem=14644>. Moreover, oyster larvae provide food to filter feeders like menhaden. As oysters mature, they become food for worms, mud crabs, blue crabs, some fish and birds.

<http://www.chesapeakebay.net/oysters.aspx?menuitem=19368>.

48. Oysters were a tremendous source of income and food to humans. From the 1800s to the mid-1900s, the commercial oyster industry employed thousands of people catching, selling, shucking, and shipping oysters to market.

<http://www.chesapeakebay.net/oysterharvest.aspx?menuitem=14701>. Hundreds of skipjacks, bugeyes and schooners, sail powered oyster dredgers, as well as thousands of oyster tonging boats plied the waters of the Bays in search of oysters.

49. The oyster industry has in the past generated millions of dollars a year to the economy. *Id.* Until the mid-1980s, the oyster was the leading commercial fishery in the Bay. Like the blue crab, Bay oysters spawned a rich cultural heritage, a heritage shared by the members of the MSSA, the MWA, and the VSWA.

50. In addition to their commercial and recreational value, oysters improve water quality because they are filter feeders. An individual adult oyster can pump over 50 gallons of water a day through its gills which strain out food, chemicals, nitrogen and phosphorus pollution, and sediment pollution. This process cleans Bay waters.

<http://www.chesapeakebay.net/oysters.aspx?menuitem=19368>.

51. Today, the oyster population in the Bay has been estimated at between 1% and 4% of its historic numbers. 2007 Assessment. In addition to disease, poor water quality limited the ability of the species to rebound.

52. The small oyster reefs of today provide less habitat for juvenile oysters and other reef dwellers. Reduced numbers of worms and other invertebrates reduce the food supply for fish and blue crabs that live near the reefs. Moreover, due to their diminished size, oyster reefs are susceptible to being smothered by runoff-induced sediment pollution.

<http://www.chesapeakebay.net/sediments.aspx?menuitem=14691>.

53. Continuing development of the land surrounding the Bay and the resulting loss of forests have led to an ever increasing load of nitrogen, phosphorus, and sediment pollution in the Bay. In addition to smothering by sediment, oysters are subject to depleted oxygen levels in the water. Unlike the blue crab and fish, oysters cannot move so when oxygen levels are low due to increased algae blooms caused by pollution, oysters either die or become stressed. Stressed oysters are more susceptible to disease.

Poor Water Quality Has Severely Harmed Bay Fish

54. Approximately 350 species of fish live in the Chesapeake Bay. Some species are year round residents. <http://www.chesapeakebay.net/fish.aspx?menuitem=14624>. Others move out to the ocean for part of their life cycle, *e.g.*, menhaden and striped bass, or up freshwater tributaries of the Bay to breed, *e.g.*, shad. Menhaden and striped bass are of particular importance to the Bay - commercially, recreationally, and to the health of the Bay.

55. Menhaden, like oysters, are filter feeders that consume algae and other forms of plankton. This form of feeding removes nitrogen and phosphorus pollution that harms water quality in the Bay. Menhaden are a primary source of food for larger fish like striped bass and bluefish. Birds like bald eagles and ospreys also prey on menhaden. <http://www.chesapeakebay.net/atlanticmenhaden.aspx?menuitem=19375>.

56. Menhaden comprise one of the oldest commercial fisheries on the Atlantic coast and one of the largest in the nation. The 2006 harvest of 376 million pounds was valued at over \$22.5 million.

<http://www.chesapeakebay.net/atlanticmenhadenharvest.aspx?menuitem=14702>.

Unfortunately, like the blue crab, menhaden stocks have diminished in recent years. Poor water quality is a key factor in the decline.

57. Historically, American shad was the most valuable fish in the Chesapeake Bay. <http://www.chesapeakebay.net/americanshadharvest.aspx?menuitem=15315>. Native Americans living along the tidal tributaries of the Bay relied on this species for their survival. In the 1800s, almost 41,000 metric tons of shad were caught a year. Tragically, the Atlantic population has been significantly depleted and it no longer supports a commercial fishery. Maryland closed its commercial fishery in 1980 and Virginia did the same in 1984.

<http://www.chesapeakebay.net/americanshadmanagement.aspx?menuitem=14771>. Poor water quality was a significant factor in the loss of this once flourishing fishery and remains an impediment to its return.

58. Poor water quality and other factors have led to historic declines in populations of blue crabs, fish, and oysters. Restrictions on harvest limits have not caused populations to rebound because of long term water quality impairments. Until water quality improves, natural resources will not improve.

Poor Water Quality Has Harmed The Chesapeake Bay Waterman

59. Since colonial times, a unique water borne harvester known as a “waterman” has collected the Bay’s bounty. The culture and fishing practices of the Chesapeake Bay Waterman have been handed down from generation to generation for over 300 years.

60. The word “waterman” as used in the Plaintiff organization names refers to persons licensed to take legal catches of fish and shellfish in the Bay. Members of these organizations harvest many species of seafood from the Bay in different seasons of the year. In any given year, a Chesapeake Bay waterman may harvest blue crabs in the summer months, oysters in the fall, striped bass and perch in the winter months and either eels, catfish, yellow perch or soft shell clams in the spring and back to crabbing in the summer. Some watermen clam year round while others may crab and oyster. Some watermen take recreational fishing parties in the summer and fish commercially in the winter for any combination of the fisheries. Many watermen have the equipment and gear necessary to do all of the above.

61. Commercial crab potters in the Chesapeake Bay are allowed to fish using a limited number of crab pots. Crab potting is hard work; watermen must clean their crab

constantly - a crabber spends as much time cleaning and repairing pots as he does fishing them. Watermen bait their pots with menhaden or other bait fish and/or razor clams. Today, the crabbing season is from the first of April to the last of November. The size limit on crabs is five inches; a crabber must return to the Bay anything under this legal limit.

62. The Bay's bounty has been greatly diminished over the years. Thus, it has become increasingly difficult to eke out a living on the water. The numbers of full time commercial watermen has dramatically declined since the mid-1900s. For example, in 1993 there were 3,858 commercial watermen in Virginia. Today, there are 2,980. Although most watermen acknowledge that overharvesting has contributed in part to their plight, poor water quality has caused and continues to cause the greatest harm to commercial and recreational shell and fin fishing.

63. Poor water quality has led to reduced shellfish and fish stocks. That, in turn, has lead to greater restrictions on harvesting; further reducing the ability of the watermen and their families to survive. During the mid-1900s an average waterman could make enough money to own a home and a boat and raise a family. Today, the typical waterman barely makes minimum wage. The 2007 Bay-wide crab harvest of 43.5 million pounds is the lowest recorded since 1945. <http://www.chesapeakebay.net/crabs.aspx?menuitem=14700>.

64. The loss of crabbing revenue has been especially difficult for small traditional fulltime watermen communities such as Guinea, Virginia; Smith and Hooper's Islands, Maryland; and Tangier Island, Virginia – where their way of life has been passed down from father to son to grandson. The economies of these communities are almost wholly based on the seafood industry, and the blue crab fishery provides the bulk of their income. Three of these locations are remote islands where residents cannot easily transition to mainland-based

jobs that may be available to displaced fishermen in other geographic areas. Moreover, watermen have gear that is specifically designed to harvest blue crabs in the winter, not commercial species. Recent regulations have closed the winter blue crab season. Thus fishermen cannot turn to other forms of fishing to offset the crabbing losses. They have lost their livelihood for several months of the year.

65. In response to the lack of income, many watermen are leaving their way of life to work on tug boats or as prison guards far from their homes and families. Due to the government's failure to act, a way of life and a valuable commercial and cultural resource is disappearing, perhaps forever.

The Impact of Poor Water Quality on Bay Recreational Fishing

66. The impact of poor water quality has been equally felt by recreational fishermen and the sportfishing industry. As described above, poor water quality in the Bay and its tributaries has significantly harmed shell and fin fisheries as well as the habitat and organisms upon which they depend for survival. Without sustainable fisheries, food, and habitat, the sportfishing industry and recreational fishing upon which it depends are harmed. This harm further damages the Bay's "economic engine."

67. The revenues derived by the states from recreational fishing licenses and taxes on gear and related expenses are significant. However, poor water quality directly affects recreational fishing by harming prey for sportfish such as striped bass and blue fish in addition to direct impacts to the sport fish and their habitats. As sport fish stocks decline, so do public revenues associated with sportfishing and private sales of sportfishing gear.

68. Moreover, citizens of the Bay watershed and those who travel here to experience the joys of recreational fishing are adversely impacted by poor water quality and the harm to natural resources of the Bay and its tributaries.

The Chesapeake Bay Agreements

69. As Bay oyster, crab, and fish populations declined, the federal government realized that something had to be done to improve water quality in the Bay or this natural treasure would be lost. In 1976, Congress directed U.S. EPA to undertake a comprehensive study of the Bay including water quality and its resources to determine how best to manage this national resource. 94 P.L.116.

70. In accordance with this mandate EPA created the Chesapeake Bay Program that developed approximately 40 research projects over seven years.

71. The United States Congress passes annual appropriations bills to fund the EPA Chesapeake Bay Program and other programs designed to ensure compliance with the Chesapeake Bay Agreements. In 2005, Congress increased the appropriated amount for the Chesapeake Bay Program. 109 P.L. 54. Most recently, the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009, provided funding. 110 P.L. 329.

72. In 1983, EPA published its "Framework for Action" which described the findings of the research and identified management strategies that could be utilized to restore the Bay. These findings and recommendations were further explained in a companion document released by EPA entitled "Chesapeake Bay Program Findings and Recommendations."

73. In 1980, Congress passed the Chesapeake Bay Research and Coordination Act (16 U.S.C. § 3001-3007). In so doing, Congress found that the Chesapeake Bay "is one of the greatest natural resources of the United States of America." The Act mandated that the

Secretary of Commerce create an Office for Chesapeake Bay Research Coordination and created a research board comprised of members selected from the federal government, Maryland, and Virginia. The board was to develop a research plan and coordinate federal research within the Bay area. Congress appropriated \$500,000 a year for four years to carry out these mandates.

74. During this time, state governments also began to examine ways to restore and protect the Bay. In 1978, the Maryland-Virginia Chesapeake Bay Legislative Advisory Commission evaluated existing and proposed management structures and made recommendations for strengthening interstate ties and better coordinating the management of the Bay. After considering several alternatives, including direct federal involvement, the advisory commission recommended the establishment of a bi-state commission.

75. In 1980, Maryland and Virginia each adopted their own legislation recognizing and implementing an agreement to create the Chesapeake Bay Commission (the “Commission”) to coordinate interstate planning and programs. Pennsylvania signed similar legislation and joined the Commission in 1985. This “tri-state agreement” marked the beginning of ongoing interstate legislative efforts to protect the estuarine habitat of the Chesapeake Bay.

76. The Commission includes fifteen legislators (five from each state), three natural resource cabinet secretaries and three citizen representatives, one each from Maryland, Pennsylvania, and Virginia. Plaintiffs Senator Fowler and Secretary Murphy have both been chairmen and members of the Commission.

77. The Commission is a signatory to all the Bay Agreements and amendments beginning in 1987 and is a member of the Executive Council of the Chesapeake Bay

Program. The Commission acts as the legislative arm of the Bay Program and each state's representatives advise their respective legislatures.

78. The EPA (on behalf of the United States), Maryland, Virginia, Pennsylvania, and the District of Columbia signed the first Chesapeake Bay Agreement in 1983 (the "1983 Bay Agreement"). <http://www.chesapeakebay.net/pubs/1983ChesapeakeBayAgreement.pdf>. Plaintiff Governor Hughes signed the Agreement on the behalf of Maryland.

79. The 1983 Bay Agreement created an Executive Council to assess and oversee implementation of coordinated plans, to improve water quality and the living resources of the Bay, and to establish an implementation committee to coordinate and evaluate management plans. The Executive Council: establishes the policy direction for the restoration and protection of the Bay and its living resources; exerts leadership to marshal public support for the Bay effort; signs directives, agreements and amendments that set goals and guide policy for Bay restoration and; is accountable to the public for progress made under the Bay agreements. <http://www.chesapeakebay.net/exec.htm>.

80. The 1983 Agreement also created a liaison office for the Chesapeake Bay activities at EPA's Central Regional Laboratory in Annapolis. Original authorization for the Commission expired on September 30, 1984, but authority to continue the Program and establish an EPA Chesapeake Bay Program Office was provided by Congress in the Water Quality Act of 1987 (P.L. 100-4, Section 103). 33 U.S.C. § 1267.

81. In 1987, a subsequent interstate agreement was signed by the Administrator of EPA, on behalf of the United States, the three Bay states, the District of Columbia, and the Chesapeake Bay Commission. (hereinafter referred to as the "1987 Bay Agreement"). <http://www.chesapeakebay.net/pubs/199.pdf>. In this agreement, the 1983 Bay Agreement

was amended to include more specific quantitative goals and commitments. The most “critical element” of the 1987 Bay Agreement was the decision to mandate the reduction of point and non-point nitrogen and phosphorous pollution loadings to the Bay by 40 percent by the year 2000. To reach this goal, the parties agreed to develop, adopt, and begin implementation of a basin-wide strategy by July 1988.

82. Under the 1987 Agreement, membership of the Executive Council changed to include cabinet secretaries to the governors of Maryland, Pennsylvania and Virginia; the administrator of the U.S. Environmental Protection Agency; the mayor of the District of Columbia; and the chair of the Chesapeake Bay Commission, a legislative body serving Maryland, Pennsylvania, and Virginia. <http://www.chesapeakebay.net/exec.htm>.

83. Congress supported this agreement by enacting the federal Water Quality Act of 1987 and authorizing \$52 million in federal assistance for the Bay Program. Feb. 4, 1987, Pub.L. 100-5, Title I, § 103, 101 Stat. 10.

84. The 1987 Agreement was amended in 1992 to, among other things; reaffirm the pollution reduction goal made in the 1987 Agreement. http://www.chesapeakebay.net/content/publications/cbp_12507.pdf. The Administrator of the EPA signed the amendment on behalf of the United States. Plaintiff Senator Fowler signed the amendment on behalf of the Commission.

85. The 1992 amendment reflected the critical importance of the tributaries in the ultimate restoration of Chesapeake Bay. The signatories specifically stated that they would “[r]educe and control point and nonpoint sources of pollution to attain the water quality condition necessary to support the living resources of the Chesapeake Bay *and its tributaries*.” *Id.* (emphasis in the original).

86. The parties also committed to develop and begin implementation of tributary-specific strategies by August 1993 to achieve the water quality requirements necessary to restore living resources in both the Bay mainstem and its tributaries.

87. By the late 1990s, it was clear that the 40% pollution reduction goal of the 1987 Bay Agreement and the 1992 amendment would not be attained and the development of a new Bay Agreement was begun.

88. On June 28, 2000, the Administrator of EPA, on behalf of the United States, signed the Chesapeake 2000 Agreement (the “2000 Agreement”) with the Bay Commission, Maryland, Pennsylvania, Virginia, and the District of Columbia.

<http://www.chesapeakebay.net/pubs/chesapeake2000agreement.pdf>. Plaintiff Mayor Anthony Williams signed the Agreement on behalf of the District of Columbia. The 2000 Agreement incorporated and reaffirmed the commitments made in 1983, 1987, and 1992 and outlined specific targets in five areas including the protection and restoration of the Bay’s living resources, vital habitat, and water quality. The 40 percent nutrient reduction goal was repeated. In addition, the 2000 Agreement stated that the signatories would reduce nitrogen, phosphorus, and sediment pollution to the Bay and its tidal tributaries sufficient to remove the Bay from the Clean Water Act section 303(d) impaired waters list by 2010.

89. The signatories to the 2000 Agreement including the United States committed to attain the following goals:

- a. Restore, enhance and protect the finfish, shellfish and other living resources, their habitats and ecological relationships to sustain all fisheries and provide for a balanced ecosystem,
- b. Preserve, protect and restore those habitats and natural areas that are vital to the survival and diversity of the living resources of the Bay and its rivers,

- c. Achieve and maintain the water quality necessary to support the aquatic living resources of the Bay and its tributaries and to protect human health,
- d. Develop, promote and achieve sound land use practices which protect and restore watershed resources and water quality, maintain reduced pollutant loadings to the Bay and its tributaries, and restore and preserve aquatic living resources
- e. Promote individual stewardship and assist individuals, community-based organizations, businesses, local governments and schools to undertake initiatives to achieve the goals and commitments of this agreement.

90. In the Agreement, the United States recognized that improving water quality in the Bay was the “most critical element in the overall protection and restoration of the Chesapeake Bay and its tributaries.” The United States acknowledged that the Bay and numerous tributaries had been recently listed as impaired pursuant to Section 303(d) of the CWA. 33 U.S.C. § 1313(d). The United States committed to improving water quality in the Bay and its tributaries “so that these waters may be removed from the impaired waters list prior to the time when regulatory mechanisms under Section 303(d) of the Clean Water Act would be applied.” The reference to “regulatory mechanisms” alluded to the federal consent decree against the United States that required the removal of these waters from the Section 303(d) list by 2010. *American Canoe Ass’n v. United States*, 54 F.Supp. 2d 62 (E.D. Va. 1999).

91. In 2000, Congress passed the Estuaries and Clean Water Act of 2000. Pub. Law No. 106-457, 106th Cong., 114 Stat. 1967, 2000 U.S.C.C.A.N.

92. Title II of the Estuaries and Clean Water Act, known as the Chesapeake Bay Restoration Act of 2000, reauthorizes Section 117 of the Federal Water Pollution Control Act pertaining to the Chesapeake Bay, 33 U.S.C. § 1267.

93. There, Congress made the following findings:

(1) the Chesapeake Bay is a national treasure and a resource of worldwide significance;

(2) over many years, the productivity and water quality of the Chesapeake Bay and its watershed were diminished by pollution, excessive sedimentation, shoreline erosion, the impacts of population growth and development in the Chesapeake Bay watershed, and other factors;

(3) the Federal Government (acting through the Administrator of the Environmental Protection Agency), the Governor of the State of Maryland, the Governor of the Commonwealth of Virginia, the Governor of the Commonwealth of Pennsylvania, the Chairperson of the Chesapeake Bay Commission, and the mayor of the District of Columbia, as Chesapeake Bay Agreement signatories, have committed to a comprehensive cooperative program to achieve improved water quality and improvements in the productivity of living resources of the Bay;

(4) the cooperative program described in paragraph (3) serves as a national and international model for the management of estuaries; and

(5) there is a need to expand Federal support for monitoring, management, and restoration activities in the Chesapeake Bay and the tributaries of the Bay in order to meet and further the original and subsequent goals and commitments of the Chesapeake Bay Program.

94. In addition, Congress stated that the purposes of the Act were to “(1) expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay, and; (2) to achieve the goals established in the Chesapeake Bay Agreement.” *Id.* (emphasis added).

95. Despite these findings and purposes, the water quality goal will be missed for a third time. As early as 2006, EPA announced that the goal of removing the Bay from the CWA § 303(d) list by 2010 would not be met. 2006-2011 EPA Strategic Plan, *Charting Our Course*, Sub-objective 4.3.4, pg. 98. That conclusion has been repeated several times since, *see, e.g.*, Chesapeake Bay Commission Meeting, January 4, 2007; U.S. EPA Chesapeake Bay Program Report to Congress “Strengthening the Management, Coordination, and Accountability of the Chesapeake Bay Program,” July 2008, Appendix D.

96. In 2004, U.S. Senator Barbara Mikulski asked the EPA Office of the Inspector General (OIG) to evaluate the Agency’s progress in meeting the nitrogen, phosphorus, and sediment pollution reduction goals of the 2000 Agreement.

97. The OIG produced eight different reports addressing this issue. Several OIG reports found that the Administrator and the United States had failed to implement programs and regulations essential for achieving the 2000 Agreement's water quality and natural resource goals.

98. A 2006 OIG report found that EPA had failed to properly coordinate with the other partners in the 2000 Agreement to achieve nitrogen, phosphorous and sediment reductions. "Saving the Chesapeake Bay Watershed Requires Better Coordination of Environmental and Agricultural Resources," EPA Office of the Inspector General, Report No. 2007-P-00004 and US Department of Agriculture Report No. 50601-10-Hq, November 20, 2006. The OIG stated that "EPA must improve its coordination and collaboration with Bay partners and the agricultural community to better reduce nutrients and sediment in the Chesapeake Bay watershed." The OIG also found that the Department of Agriculture failed to comply with its commitments as a Bay partner:

USDA, a Bay partner at the Federal level, could significantly assist EPA in implementing the needed conservation practices within the agricultural community. Given its many conservation programs, extensive field organization, and long experience working with the agricultural community, USDA's commitment and collaboration would significantly contribute to the EPA Chesapeake Bay Program Office's plan for long-term improvement to the Bay's water quality. However, USDA has not coordinated a Department-wide strategy or policy to address its commitment as a Bay partner.

99. One report stated that EPA had failed to properly address pollution from increasing development within the Bay watershed. "Development Growth Outpacing Progress in Watershed Efforts to Restore the Chesapeake Bay," EPA Office of the Inspector General, Report No. 2007-P-00031, September 10, 2007. The OIG stated that EPA had failed to develop community-level loading caps; lacked up-to-date information on development patterns; had ineffectively used its regulatory program to achieve reductions

and had provided limited information and guidance on planning and applying environmentally sensitive development practices. The report further stated that “[o]pportunities abound for EPA to show greater leadership in identifying practices that result in no-net increases in nutrient and sediment loads from new development and assisting communities in implementing these practices.”

100. A third report concluded that EPA was merely relying on then existing Clean Air Act strategies to gain nitrogen reduction from air deposition in the Chesapeake Bay watershed. “EPA Relying on Existing Clean Air Act Regulations to Reduce Atmospheric Deposition to the Chesapeake Bay and its Watershed,” Report No. 2007-P-00009, February 27, 2007. The report acknowledged that the efficacy of such reliance remained to be seen. One of the regulatory programs EPA has relied upon for air pollution reductions is the Clean Air Interstate Rule. However, the viability of that regulation has been undercut by a recent ruling of the U.S. Circuit Court for the District of Columbia. *North Carolina v. EPA*, 2008 U.S. App. LEXIS 26084, Dec. 23, 2008, D.C. Cir. While the Court has permitted the program to continue, EPA must undertake a new rulemaking in accordance with the Court’s opinion. Thus, it is uncertain whether the new regulation will achieve the nitrogen goals originally anticipated. Moreover, the OIG concluded that EPA had failed to properly consider the impacts to the Bay from ammonia emissions related to agriculture.

101. Another report evaluated EPA’s oversight of wastewater treatment plant upgrades in the Bay watershed. “Despite Progress, EPA Needs to Improve Oversight of Wastewater Upgrades in the Chesapeake Bay Watershed,” EPA Office of the Inspector General, Report No. 08-P-0049, January 8, 2008. That report concluded that EPA had not properly monitored such upgrades to ensure they occurred on time to achieve the Bay Agreement goals and that

nitrogen and phosphorous load reductions are achieved and maintained. EPA had also to establish interim construction milestones for priority facilities, had failed to monitor milestone and financial funding progress for these facilities; and had not fully developed effective and credible water quality trading programs. The report concluded that without these efforts “Bay waters will continue to be impaired, adversely affecting living resources throughout the ecosystem that supports commercial and recreational uses.”

102. The most recent OIG report determined that EPA had failed to properly advise the public and the other partners to the Bay Agreements of the issues that need to be addressed if the 2000 Agreement goals are to be achieved. "EPA Needs to Better Report Chesapeake Challenges, A Summary Report," EPA Office of the Inspector General, Report No. 08-0199, July 14, 2008.

103. In addition to the OIG reports, the General Accountability Office (GAO), the investigative arm of the U.S. Congress, issued a report evaluating EPA's progress in meeting the nutrient and sediment goals of the 2000 Agreement. "Chesapeake Bay Program: Improved Strategies are Needed to Better Assess, Report and Manage Restoration Progress," GAO-06-96, July 12, 2006. The report found that the United States had failed to implement programs and regulations essential for achieving the Agreement's water quality goals. In a recent GAO report suggests that EPA has undertaken some actions to improve its compliance with the Bay Agreements, the report states that EPA has not undertaken all actions identified in the 2005 report. "GAO's 2005 Report on the Chesapeake Bay Program and the Bay Program's Response to Recommendations," GAO-08-1131R, August 2008.

104. In 2004, CBF issued a petition to the Administrator of EPA asking that the agency develop stricter regulations controlling point source discharges of nitrogen and phosphorus.

in the Bay region. EPA declined to comply with the petition, instead, issuing a “Permitting Approach” in December 2004. That document declared, in part, that EPA would withdraw its waiver of review authority for all significant dischargers in the Bay watershed. EPA also declared that it would consider requiring compliance schedules in all such permits. EPA has failed to fully comply with its “Permitting Approach” leading to the continued discharge of nitrogen and phosphorous into the Bay and its tributaries.

105. The failures of the United States to comply with the terms of the Chesapeake Bay Agreements and the CWA identified above, among other things, has led to the continued degradation of water quality in the Chesapeake Bay and its tributaries all to the detriment of Plaintiffs’ aesthetic, cultural, educational, economic, recreational, and restoration interests.

CLAIMS

Count I: The Administrator Has Failed to Comply With the Clean Water Act

106. Plaintiffs reallege and incorporate by reference paragraphs 1 through 105 above.

107. Section 117(g)(1) of the CWA requires the Administrator of EPA to take specific steps to achieve the nutrient goals of the Chesapeake 2000 Agreement. Section 117 provides (33 U.S.C. § 1267(g)(1)(A)-(E)):

(g) Chesapeake Bay Program **(1) Management strategies**

The Administrator, in coordination with other members of the Chesapeake Executive Council, shall ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay Agreement to achieve and maintain –

(A) the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed.

(B) the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem;

(C) the Chesapeake Bay Basinwide Toxins Reduction and Prevention Strategy goal of reducing or eliminating the input of chemical

contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources of the Chesapeake Bay ecosystem or on human health;

(D) habitat restoration, protection, creation, and enhancement goals established by Chesapeake Bay Agreement signatories for wetlands, riparian forests, and other types of habitat associated with the Chesapeake Bay ecosystem; and

(E) the restoration, protection, creation, and enhancement goals established by the Chesapeake Bay Agreement signatories for living resources associated with the Chesapeake Bay ecosystem.

108. Section 117 was re-authorized as part of the Estuaries and Clean Water Act 2000, Title II Chesapeake Bay Restoration. One of the explicit purposes of the Restoration title was “to achieve the goals established in the Chesapeake Bay Agreement.” 106 Pub. Law 457, Title II, Sec. 202(b)(2), Nov. 7, 2000, 114 Stat. 1967.

109. The duties of the Administrator are non-discretionary and subject to enforcement via the citizen suit provisions of the CWA. 33 U.S.C. § 1365.

110. Section 117(g)(1)(A) requires the Administrator to develop management plans and begin implementation to achieve and maintain “the nutrient goals” of the Chesapeake Bay Agreement “for the quantity of nutrient and phosphorus entering the Chesapeake Bay and its watershed.” 33 U.S.C. § 1267(g)(1)(A).

111. Section 117(g)(1)(B) requires the Administrator to develop management plans and begin implementation to achieve and maintain “the water quality requirements necessary to restore living resources in the Chesapeake Bay ecosystem.”

112. The 1987 Bay Agreement set a goal for reducing nutrient pollution by 40 percent by the year 2000. That goal was reaffirmed in the 1992 amendment. It was not met by the 2000 deadline.

113. The Chesapeake 2000 Agreement provides:

GOAL

Achieve and maintain the water quality necessary to support the aquatic living resources of the Bay and its tributaries and to protect human health.

Nutrients and Sediments

Continue efforts to achieve and maintain the 40 percent nutrient reduction goal agreed to in 1987, as well as the goals being adopted for the tributaries south of the Potomac River.

By 2010, correct the nutrient- and sediment-related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters under the Clean Water Act. In order to achieve this:

1. By 2001, define the water quality conditions necessary to protect aquatic living resources and then assign load reductions for nitrogen and phosphorus to each major tributary;
2. Using a process parallel to that established for nutrients, determine the sediment load reductions necessary to achieve the water quality conditions that protect aquatic living resources, and assign load reductions for sediment to each major tributary by 2001;
3. By 2002, complete a public process to develop and begin implementation of revised Tributary Strategies to achieve and maintain the assigned loading goals;
4. By 2003, the jurisdictions with tidal waters will use their best efforts to adopt new or revised water quality standards consistent with the defined water quality conditions. Once adopted by the jurisdictions, the Environmental Protection Agency will work expeditiously to review the new or revised standards, which will then be used as the basis for removing the Bay and its tidal rivers from the list of impaired waters; and
5. By 2003, work with the Susquehanna River Basin Commission and others to adopt and begin implementing strategies that prevent the loss of the sediment retention capabilities of the lower Susquehanna River dams.

114. Paragraphs 1, 3, and 4 identify “the nutrient goals” “for the quantity of nitrogen and phosphorus pollution entering the Chesapeake Bay and its watershed” to which Section 117(g)(1)(A) and (B) refer and therefore are the goals Section 117 requires the Administrator to achieve.

115. The goals in paragraphs 1, 3, and 4, which address nutrient-reduction, are enforceable because these goals were created “[i]n order to achieve” the 2010 goal of removing the Bay from the impaired waters list and their deadlines have now passed.

116. EPA has admitted that it cannot attain the 2000 Agreement water quality goal of 40 percent nutrient reduction or removing the Bay from the impaired waters list by 2010.

117. Section 117(g)(1)(C) requires the Administrator to develop and begin implementing management plans to achieve and maintain the “goal of reducing or eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources of the Chesapeake ecosystem or on human health.” 33 U.S.C. 1267(g)(1)(C).

118. By referring to the “goal of reducing or eliminating the input of chemical contaminants,” Section 117(g)(1)(C) incorporates by reference the goals the signatories created in the *Chemical Contaminants* section of the Chesapeake 2000 Agreement. The United States commits to the “goal of ... reducing or eliminating the input of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources that inhabit the Bay or on human health.” The *Chemical Contaminants* section also lists specific goals, some of which are subject to deadlines. For example, it requires a reevaluation of the “Chesapeake Bay Basinwide Toxics Reduction Prevention Strategy” by the fall of 2000.

119. Numerous waterbodies throughout the Bay watershed contain fish consumption health advisories for toxic chemicals including PCBs and mercury. <http://www.chesapeakebay.net/fishadvisory.aspx?menuitem=19479>. The number of impaired bodies of water increases yearly. The Administrator has failed to develop a

plan to reduce or eliminate these contaminants and others from the Bay ecosystem.

Moreover, the Administrator has failed to achieve the goals stated in the *Chemical Contaminants* section of the 2000 Agreement.

120. Section 117(g)(1)(D) requires the Administrator to develop and begin implementing management plans to achieve and maintain the “habitat restoration, protection, creation, and enhancement goals established by” the Chesapeake Bay Agreement signatories “for wetlands, riparian forests, and other types of habitat associated with the Chesapeake Bay ecosystem.” 33 U.S.C. 1267(g)(1)(D).

121. By referring to the goals “for wetlands, riparian forests, and other types of habitat,” Section 117(g)(1)(D) incorporates by reference the goals the signatories created in the *Vital Habitat Protection and Restoration* section of the Chesapeake 2000 Agreement, which contains goals addressing various Chesapeake Bay habitats, including, wetlands, forests, submerged aquatic vegetation, and watersheds. This section includes deadlines by which the goals must be completed. For example, it requires the achievement and maintenance of “an average restoration rate of 2,500 acres of wetlands per year basin wide by 2005 and beyond,” as well as an evaluation of the success of meeting that goal in 2005. The Administrator has failed to achieve the goals stated in the *Vital Habitat Protection and Restoration* section of the 2000 Agreement.

122. Section 117(g)(1)(E) requires the Administrator to develop and begin implementing management plans to achieve and maintain “the restoration, protection, creation, and enhancement goals” established by the Chesapeake Bay Agreement signatories “for living resources associated with the Chesapeake Bay ecosystem.” 33 U.S.C. 1267(g)(1)(E).

123. The *Living Resource Protection and Restoration* section of the Chesapeake Agreement lists specific restoration, protection, creation, and enhancement goals for living resources in the Bay, including oysters, crabs, exotic species, and migratory, resident and passing fish. This section includes deadlines by which the goals must be completed. For example, it requires management plans and implementation schedules for specific species to be completed by dates that have now passed. The Administrator has failed to achieve the goals stated in the *Living Resource Protection and Restoration* section of the 2000 Agreement.

124. Thus, the following goals of the Chesapeake 2000 Agreement, among others, are enforceable as mandatory duties under Section 117(g)(1): the nutrient goals contained in the *Nutrients and Sediments* section; the habitat and living resource goals contained in the *Habitat Protection and Restoration* and *Living Resource Protection and Restoration* sections; and the chemical contaminants reduction goals contained in the *Chemical Contaminants* section. These goals have not been met.

125. The failures of the Administrator to address on-going concerns about the ability of the United States and the other Bay Agreement signatories have been documented in several reports by EPA's Office of Inspector General and Congress' General Accountability Office described above.

126. Moreover, the Administrator could have undertaken other actions that would have allowed the Bay to have been removed from section 303(d) impaired waters list. For example, the Administrator could have developed and implemented a Bay-wide Total Maximum Daily Load, 33 U.S.C. § 1313, stringent construction and urban stormwater regulations throughout the Bay watershed, and Bay specific nitrogen and mercury limits.

air emissions throughout the Bay airshed. The Administrator has failed to do any of these things.

127. Congress required that the Administrator achieve the goals of the Bay Agreements, not merely develop plans and begin implementation. 106 Pub.L. 457, Title II, Sec. 202(b)(2), Nov. 7, 2000, 114 Stat. 1967. However, the Administrator has failed to comply with that directive. Accordingly, the Administrator is subject to suit pursuant to Section 505(a)(2) of the CWA. 33 U.S.C. § 1365(a)(2).

128. The Administrator has failed to comply with the duties set forth in Section 117(g) of the CWA and the Chesapeake Bay Agreements to the detriment of the Plaintiffs and their respective members aesthetic, cultural, educational, economic, recreational, and restoration interests.

Count II: The Administrator Has Violated the Administrative Procedure Act

129. The Plaintiffs reallege and incorporate by reference paragraphs 1-128.

130. The Administrative Procedure Act allows citizens to challenge federal agency decisions that are unlawfully withheld or unreasonably delayed. 5 U.S.C. § 706. Agency action may also be challenged as arbitrary and capricious. *Id.*

131. The Administrator, on behalf of the United States, entered into the 1987 Chesapeake Bay Agreement and its 1992 amendment that committed the United States to reduce nitrogen and phosphorous inputs to the Bay and its tributaries by 40 percent. That goal was to have been met by 2000. It was not. In the Chesapeake 2000 Agreement, the Administrator on behalf of the United States committed to achieve that goal and the goal of removing the Bay from the impaired waters list by 2010. The Administrator has admitted that neither of those goals will be met.

132. The Administrator, on behalf of the United States, further committed to meet the water quality, living resource, vital habitat, and chemical contaminant goals of the Chesapeake 2000 Agreement identified above. Those goals have not been met.

133. As described above, the Administrator has failed to undertake numerous actions that would have allowed the water quality, living resource, vital habitat, and chemical contaminant goals set forth in the Chesapeake Bay Agreements to be met.

134. The allegations above establish that the Administrator has unreasonably delayed action that would have allowed the water quality, living resource, vital habitat, and chemical contaminant goals set forth in the Chesapeake Bay Agreements to have been met.

135. The Administrator's failure to undertake timely actions sufficient to meet the water quality, living resource, vital habitat, and chemical contaminant goals of the Chesapeake Bay Agreements was arbitrary and capricious.

136. Federal agency action and inaction which violate the terms of the Chesapeake Bay Agreements are "not otherwise in accordance with the law" and are per se arbitrary and capricious under the Administrative Procedure Act, 5 U.S.C. § 706(2)(A).

137. The Administrator's unlawful withholding of action, untimely delay, and arbitrary and capricious failure to comply with the terms of the Chesapeake Bay Agreements has harmed the Plaintiffs' and their respective members' aesthetic, cultural, educational, economic, recreational, and restoration interests.

138. Because the Administrator has unreasonably failed to timely comply with the terms of the Chesapeake Bay Agreements and has acted arbitrarily and capriciously he has violated the Administrative Procedure Act. Thus, the United States is subject to suit. 5 U.S.C. §§ 702.

Count III: The Chesapeake Bay Agreements are Enforceable Interstate Compacts

139. The Plaintiffs reallege and incorporate by reference paragraphs 1-138.

140. The Chesapeake Bay Agreements including the 2000 Agreement are interstate compacts between the signatory states and the United States. Thus, they may be enforced pursuant to federal law. Compact Clause of the United States Constitution, U.S. Const. art. I, §10, cl. 3.

141. The Chesapeake Bay Agreements including the 2000 Agreement increase the power of the signatory states.

142. The terms of the Chesapeake Bay Agreements are appropriate for Congressional legislation.

143. Congress approved the Chesapeake Bay Agreements. The Clean Water Act specifically states that Congress consents to the states entering into “agreements or compacts, ..., for (1) cooperative effort and mutual assistance for the prevention and control of pollution....” 33 U.S.C. § 1253(b)(1).

144. The Clean Water Act defines the “Chesapeake Bay Agreement” as the “formal, voluntary agreements executed to achieve the goal of restoring and protecting the Chesapeake Bay ecosystem and the living resources of the Chesapeake Bay ecosystem and signed by the Chesapeake Executive Council.” 33 U.S.C. § 1267(a)(2). Moreover, the Bay Agreements are cooperative efforts to control pollution in the Bay. Thus, Congress has expressly approved the Bay Agreements.

145. Further, Congress has approved the terms of the Chesapeake Bay Agreements through enactment of Section 117 of the CWA, its continued appropriations of the Chesapeake Bay Program and other programs designed to ensure compliance with the terms

of the Bay Agreements, and its passage of Title II of the Estuaries and Clean Water Act of 2000. In Title II, Congress specifically found that the purpose of Section 117 was to, “expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay” ; “achieve the goals established in the Chesapeake Bay Agreement.” 33 U.S.C. § 1367; P.L. 457. *See* 33 U.S.C. 1251. Thus, Congress has approved the terms of the Chesapeake Bay Agreements.

146. Because the Bay Agreements including the 2000 Agreement are interstate compacts, the United States has consented to suit for enforcement of the terms of the Agreements.

147. The United States has failed to comply with the water quality and living resource goals of the Chesapeake Bay Agreements including the 2000 Agreement.

148. Because of the failure of the United States to comply with these agreements water quality in the Chesapeake Bay and its tributaries has not improved and continues degraded. Moreover, living resources within the Bay and its tributaries continue to be harmed.

149. The individual Plaintiffs are all signatories to the various Bay Agreements.

150. The Plaintiffs and their members are third-party beneficiaries to the terms of the Chesapeake Bay Agreements including the 2000 Agreement. Thus, they may enforce the terms of the Bay Agreements against the United States.

151. The Bay Agreements were signed for the benefit of those who rely on the Bay for their livelihood such as the Maryland and Virginia watermen who are plaintiffs here. In addition, the signatories to the Bay Agreements specifically recognized that they must take action to protect public health and the environment.

152. The 2000 Agreement makes the following statements:

-For almost two decades, we, the signatories to these agreements, have worked together as stewards to ensure the public's right to clean water and a healthy and productive resource. We have sought to protect the health of the public that uses the Bay and consumes its bounty. Preamble.

- Our efforts to preserve the integrity of this natural infrastructure will protect the Bay's waters and living resources and will ensure the viability of human economies and communities that are dependent upon those resources for sustenance, reverence and posterity. Vital Habitat Protection and Restoration.

153. As a signatory to that agreement and its predecessors, the United States has failed to honor its commitments to achieve and maintain the living resource goals and the water quality goals of reducing nutrient pollution by 40% and removing the Bay from the Section 303(d) impaired waters list. Thus, the Plaintiffs may sue the United States to enforce the terms of the Bay Agreements.

RELIEF

WHEREFORE, Plaintiffs request the following relief:

1. Order the Administrator to comply with the requirements of Section 117(g) of the CWA.
2. Order the United States to comply with the terms of the Chesapeake 2000 Agreement.
3. Order the United States to develop and implement programs designed to significantly reduce nitrogen, phosphorous, and sediment discharges from all point sources within the Bay Watershed.
4. Order the United States to develop and implement programs designed to fully and immediately comply with the recommendations made in the recent Office of Inspector General and Government Accountability Office reports.
5. Order the United States to develop and implement programs that the targeting of federal agricultural conservation dollars in the Chesapeake Bay watershed by practice and

geography so as to significantly reduce nitrogen, phosphorous, and sediment pollutant the Chesapeake and its rivers and require the implementation of best management practices as a condition to acceptance of federal agricultural subsidies.

6. Order the United States to develop and implement programs to prevent backsliding point source reductions via strong point source permits and enforcement; that strictly regulate nitrogen oxide emissions from power plants including year round controls; require pollution loads from new development be consistent with TMDLs; and that stringent loading limits, pollution prevention requirements, and TMDL linkage in a municipal separate storm sewer system permits.
7. Order the United States to design a program to assist watermen to continue working the water by providing funding and expertise to help, for example, develop cooperatives, build and operate oyster hatcheries, and promote aquaculture.
8. Provide such other relief as is necessary and appropriate to achieve the water quality goals of the Clean Water Act and the Bay Agreements.

Date: January 5, 2009



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Attachment

Fowler v. EPA
Settlement Agreement
May 10, 2010

SETTLEMENT AGREEMENT

WHEREAS, on January 5, 2009, plaintiffs C. Bernard Fowler, *et al.* (collectively “Plaintiffs”) filed suit against defendant United States Environmental Protection Agency (“EPA”) alleging that EPA failed to comply with the Clean Water Act (“CWA” or “Act”), (No. 1:09-CV-00005-CKK, the Administrative Procedure Act, and the Chesapeake Bay Agreements with respect to restoring and preserving Chesapeake Bay (“Bay” or “the Bay”) water quality and living resources;

WHEREAS, Count I of Plaintiffs’ complaint alleges that EPA has nondiscretionary duties under Section 117(g) of the Act, 33 U.S.C. § 1267(g), to achieve and maintain the goals of the Chesapeake Bay Agreement, which duties are enforceable via the citizen suit provisions of the Act, 33 U.S.C. § 1365;

WHEREAS, on May 12, 2009, President Barack Obama issued Executive Order 13526 (74 Fed. Reg. 23,099) (“Executive Order”), whose Section 201 established a Federal Leadership Committee (“Committee”) to “manage the development of strategies and program plans for the watershed and ecosystem of the Chesapeake Bay and oversee their implementation.” The Administrator of the Environmental Protection Agency, or the Administrator’s designee, shall Chair the Committee;

WHEREAS, in accordance with Section 202 of the Executive Order, on September 1, 2009, EPA submitted a draft report to the Committee;

WHEREAS, on November 24, 2009, EPA submitted a revised draft Report (“Report”) to the Committee;

WHEREAS, the revised draft Report recommends various actions to protect and restore

the Bay;

WHEREAS, Section 203 of the Executive Order provides that the “Committee shall prepare and publish a strategy for coordinated implementation of existing programs and projects to guide efforts to protect and restore the Chesapeake Bay;”

WHEREAS, in accordance with Section 203 of the Executive Order, on November 9, 2009, the Committee published a Draft Strategy for Protecting and Restoring the Chesapeake Bay (“Draft Strategy”) for public review and comment;

WHEREAS, the public comment period on the Draft Strategy ended on January 8, 2010;

WHEREAS, the Committee will publish a final Strategy for protecting and restoring the Chesapeake Bay by May 12, 2010;

WHEREAS, Section 203 of the Executive Order provides, among other things, that “[t]o the extent practicable and authorized under their existing authorities, agencies may begin implementing core elements of restoration and protection programs and strategies, in consultation with the Committee, as soon as possible and prior to release of a final strategy;”

WHEREAS, EPA is in the process of developing a federal Total Maximum Daily Load for nutrients and sediment for the Chesapeake Bay and its tidal tributaries (the “Bay TMDL”) because, among other things, the water quality goals set forth in the Chesapeake 2000 Agreement will not be met by 2010;

WHEREAS, by letter dated September 11, 2008 EPA provided the Chair of the Chesapeake Bay Program’s Principals’ Staff Committee (PSC) with information about the Bay TMDL, including information about how EPA intends for the Bay TMDL to allocate nutrient and sediment loads and provide accountability for the basin-wide reductions necessary to achieve

water quality standards and stating that EPA's "expectations for the Bay TMDL are not applicable to the TMDL program in general." (Hereinafter the "September 11, 2008 letter")

WHEREAS "Enclosure A" to EPA's September 11, 2008 letter to the PSC said that "EPA expects each of the TMDL states and the District to work with Region III to develop following information as part of its reasonable assurance and implementation framework" f Bay TMDL:

- "1. Identify the controls needed to achieve the allocations identified in the proposed TMDL through revised state tributary strategies.
2. Identify the current state and local capacity to achieve the needed controls (*i.e.* an assessment of current point source permitting/treatment upgrade funding programs and nonpoint source control funding, programmatic capacity, regulations, legislative authorities, *etc.*).
3. Identify the gaps in current programs to achieve the needed controls (additional incentives, state or local regulatory programs, market-based tools, technical or financial assistance, new legislative authorities, *etc.*).
4. A commitment from each state and the District to work to systematically fill the identified gaps to build the program capacity needed to achieve the needed controls. As part of this commitment, the states and the District would agree to meet specific, iterative, and short-term (1-2 year) milestones demonstrating increased levels of implementation and/or nutrient and sediment load reductions.
5. A commitment to continue efforts underway to expand monitoring, tracking, and reporting directed towards assessing the effectiveness of implementation actions and use these data to drive adaptive decision-making and redirect management actions.

6. Agree that if jurisdictions do not meet these commitments, additional measures will be necessary;”

WHEREAS, by letter dated November 3, 2009, EPA provided the PSC with “the preliminary basinwide target loads for nitrogen and phosphorus and the working target loads for nitrogen and phosphorus for the basin-jurisdictions to meet the states’ Bay dissolved oxygen water quality standards in the Chesapeake Bay and its tidal tributaries” and milestones for completion of the Bay TMDL (Hereinafter the “November 3, 2009 letter”);

WHEREAS, by letter dated November 4, 2009, EPA provided the PSC with “the U.S. Environmental Protection Agency’s expectations for the Watershed Implementation Plans, which the six watershed States and the District of Columbia will submit in support of the development of the draft and final” Bay TMDL and identified a variety of actions EPA may take if the jurisdictions do not submit Watershed Implementation Plans or the plans do not meet EPA’s expectations. (Hereinafter the “November 4, 2009 letter”);

WHEREAS, the actions identified by EPA in its November 4, 2009 letter to the PSC included, but were not limited to, the following:

1. Revising the Bay TMDL wasteload allocations to assign more stringent pollutant reduction responsibilities to point sources of nutrient and sediment pollution.
2. Objecting to State-issued CWA NPDES permits.
3. Acting to limit or prohibit new or expanded discharges of nutrients and sediments, and/or
4. Withholding, conditioning, or reallocating federal grant funds;

WHEREAS, in its Report, EPA identified two additional actions EPA may take if the jurisdictions do not submit Watershed Implementation Plans or the plans do not meet EPA's expectations:

1. EPA review of facilities covered under a general permit for possible coverage under an individual permit;
2. EPA review of permits to determine if the requirement in 40 C.F.R. 131.12(a)(2) (as reflected in state anti-degradation regulations) is met;

WHEREAS, by letter dated December 29, 2009, EPA provided the PSC with a description of EPA's "Chesapeake Bay Accountability Framework." In the letter EPA said "[f]ailure to fully meet the expectations identified [in the November 4, 2009 letter] would subject a State and/or the District to potential EPA actions." (Hereinafter the "December 29, 2009 letter");

WHEREAS, "Enclosure B" to the December 29, 2009 letter identified the following potential actions currently available to EPA:

1. Expand National Pollutant Discharge Elimination System (NPDES) permit coverage to currently unregulated sources;
2. Object to NPDES permits and increase program oversight;
3. Require net improvement offsets;
4. Establish finer scale wasteload and load allocations in the Bay TMDL;
5. Require additional reductions of loadings from point sources;
6. Increase and target federal enforcement and compliance assurance

the watershed;

7. Condition or redirect EPA grants; and
8. Federal promulgation of local nutrient water quality standards;

WHEREAS, EPA is developing three Clean Air Act (“CAA”) rules that could affect ambient air levels of NO_x and therefore the deposition of nitrogen to the Bay and the Bay Watershed, i.e., a rule to replace the court-remanded Clean Air Interstate Rule (CAIR); reconsideration of the national ambient air quality standards for ozone that were promulgated in 2008; and review of the secondary national ambient air quality standards for oxides of nitrogen and sulfur;

WHEREAS, EPA is implementing new source performance standards for stationary spark-ignition engines and finalizing the proposed amendments to the national emission standards for stationary reciprocating internal combustion engines (RICE) (75 Fed. Reg. 9648);

WHEREAS, EPA is in the process of implementing the following mobile source rules and programs: the Light Duty Tier 2 Rule (65 Fed. Reg. 6698); the Clean Heavy Duty Truck and Bus Rule (66 Fed. Reg. 5502); the Clean Air Non-road Diesel-Tier 4 Rule (69 Fed. Reg. 38957); four Marine-related NO_x reduction programs (64 Fed. Reg. 73300, 67 Fed. Reg. 68242, 68 Fed. Reg. 9746, 73 Fed. Reg. 59034); the Locomotive and Marine Diesel Rule (73 Fed. Reg. 25098); the Non-road Large and Small Spark-Ignition Engines Programs (73 Fed. Reg. 59034); the Coordinated Strategy for Control of Emissions from Ocean-Going Vessels; and the Voluntary Clean Diesel Programs;

WHEREAS, EPA is developing or revising multiple rules under sections 112 and 129 of the Clean Air Act that are expected to affect ambient levels of mercury and therefore the

deposition of mercury to the Bay and the Bay watershed, *e.g.*, standards for electric utilities commercial and industrial waste incinerators, industrial boilers, municipal waste combustor Portland cement manufacturing, and the iron and steel industry;

WHEREAS, based on present modeling, EPA expects that existing and anticipated Clean Air Act regulations will result in nitrogen air deposition reductions delivered to the Chesapeake Bay of at least 8 million pounds per year by 2020, as compared to 2002 modeled baseline, and those reductions will be accounted for in the Bay TMDL;

WHEREAS, on November 24, 2009, EPA published a “Draft Chesapeake Bay Compliance and Enforcement Strategy” that focuses on four “key sectors” – CAFOs, municipal and industrial wastewater facilities, stormwater NPDES point sources, and air deposition sources of nitrogen regulated under the Clean Air Act, and EPA intends to apply that Strategy consistently with the May 12, 2010 Bay Strategy;

WHEREAS, on April 2, 2010, EPA issued a “Guide for the Evaluation of Watershed Implementation Plans,” which provided minimum EPA expectations for the Bay Watershed jurisdictions’ use of offsets to ensure maintenance of the TMDL’s cap loads in the face of anticipated new or increased discharges, including the capability to ensure that trades and offsets can be verified and are consistent with meeting applicable water quality standards and Bay TMDL wasteload allocations;

WHEREAS, on April 21, 2010, EPA issued for public notice and comment a draft NPDES permit for the Municipal Separate Storm Sewer System (MS4) of the District of Columbia;

WHEREAS, Plaintiffs and EPA wish to implement this Settlement Agreement in order

avoid further litigation.

NOW, THEREFORE, Plaintiffs and EPA agree as follows:

I. GENERAL PROVISIONS

A. The parties to this Settlement Agreement (“Agreement”) are the Plaintiffs and EPA. Nothing in this Agreement shall be construed to make any other person or entity not executing this Agreement a third-party beneficiary to this Agreement.

B. This Agreement applies to, is binding upon, and inures to the benefit of the Plaintiffs (and their successors, assigns, and designees) and EPA.

C. This Agreement shall not constitute an admission or evidence of any fact, wrongdoing, misconduct, or liability on the part of the United States, its officers and agencies, or any person affiliated with it.

II. DEFINITIONS

For purposes of this Settlement Agreement, terms used in the Agreement that are already defined in the Clean Water Act or EPA’s implementing regulations, e.g., “wasteload allocation” and “load allocation,” have the meaning expressed in those definitions. The following terms used in the Agreement are defined as follows:

“Bay TMDL” means the Total Maximum Daily Load to address the impaired segments of the Chesapeake Bay identified on the currently applicable Section 303(d) list for which the aquatic life use(s) and associated criteria (*i.e.*, dissolved oxygen, water clarity, submerged aquatic vegetation, and chlorophyll *a*) have been impaired by nitrogen, phosphorous, and/or sediment pollutants.

“Bay Watershed Jurisdiction” means one of the following: Virginia, Maryland,

Pennsylvania, Delaware, West Virginia, New York, and the District of Columbia.

“Chesapeake Bay” means the tidal waters of the Chesapeake Bay and the tidal portion of the tributaries to the Bay out until the easternmost boundary of Chesapeake Bay with the Atlantic Ocean represented by a line between Cape Charles and Cape Henry, as further described in Appendix C, page 61 (wherein there are latitude and longitude coordinates for segment CB8PH, which is the segment at the mouth of the Bay) of *Chesapeake Bay Program Analysis Segmentation Schemes: Revision, decisions and rationales, 1983-2003*. EPA 903-R-04-008 CBP/TRS 268/04. Chesapeake Bay Program Office, Annapolis, Maryland.

“Establish the Bay TMDL” means the date the Administrator, or her designee, signs the Bay TMDL.

“Effective date of this Settlement Agreement” means the date it is signed by all parties.

“Final action” means a final decision by the EPA Administrator, or her designee, on proposed regulations or proposed permit referred to in paragraphs 9.d, 12 and 13.

“Impaired segment” means a specifically identified portion of a waterbody that does not meet all of its applicable water quality standards.

“NPDES permits” means a “permit” as defined in 40 C.F.R. § 122.2.

“Nutrient” means compounds of nitrogen and phosphorus and/or any of their forms that are essential to plant and animal life but in excess quantity in waterbodies, including the Chesapeake Bay, can cause impairment of aquatic life use(s).

“Phase 1 Watershed Implementation Plans” means those WIPs that EPA expects the States to deliver in 2010 to provide information for EPA to consider when it establishes the TMDL, as described in the EPA letter signed by Acting Regional Administrator William C.

Early, dated November 4, 2009, and as may be further described in other communications from the Regional Administrator to the Principals' Staff Committee of the Chesapeake Bay Program.

“Phase 2 Watershed Implementation Plans” means those WIPs that EPA expects States to deliver in 2011, as described in the EPA letter signed by Acting Regional Administrator William C. Early, dated November 4, 2009, and as may be further described in other communications from the Regional Administrator to the Principals' Staff Committee of the Chesapeake Bay Program.

“Plaintiffs” means C. Bernard Fowler, Harry R. Hughes, W. Tayloe Murphy, Jr., Anthony A. Williams, the Chesapeake Bay Foundation, Inc., the Maryland Saltwater Sportfisherman's Association, Inc., the Maryland Watermen's Association, Inc., and the Virginia State Waterman's Association, Inc.

“Section 303(d) list” means the list of impaired waters submitted to, and approved by, EPA pursuant to 40 C.F.R. § 130.7(d) or established by EPA pursuant to 40 C.F.R. § 130.7(d).

“Sediment” means finely divided solid materials including, but not limited to, loose particles of clay, sand or silt that are suspended in water and/or such material that may be deposited onto the surface beneath this water, and that in excess quantities in water, including the Chesapeake Bay, can cause impairment of aquatic life use(s).

“Significant point source discharge of nitrogen, phosphorus and sediment” means an NPDES point source wastewater treatment facility discharging to the Chesapeake Bay watershed that each Bay jurisdiction defines as follows (subject to revision as indicated):

West Virginia, Delaware and New York: facility treating domestic wastewater and the design flow greater than or equal to 0.4 million gallons a day (mgd);

Pennsylvania: facility treating domestic wastewater and discharging greater than or equal to 0.1 mgd;

Maryland: facility treating domestic wastewater and the design flow is greater than or equal to 0.5 mgd;

Virginia: facility treating domestic wastewater and the design flow is greater than or equal to 0.1 mgd west of the fall line, or greater than or equal to 0.1 mgd east of the fall line, as well as new facilities greater than 40,000 gallons per day (gpd) or facilities expanding to greater than 40,000 (gpd);

Across all seven jurisdiction - industrial facilities with a nutrient load equivalent to 3,800 pounds per year total phosphorus or 27,000 pounds per year total nitrogen;

Any other facility identified as such by a Bay jurisdiction Tributary Strategy, Watershed Implementation Plan, Bay Watershed jurisdiction, or EPA.

“Tidal tributaries” means those tributaries to the Chesapeake Bay that are tidally influenced.

“Tributary strategy cap loads” means the cap load allocations for nitrogen, phosphorus, and sediment assigned to the Bay Jurisdictions as set forth in the Memorandum of the Principals’ Staff Committee, signed April 25, 2003, by W. Tayloe Murphy, Jr., titled “Summary of Decisions Regarding Nutrient and Sediment Load Allocations and New Submerged Aquatic Vegetation (SAV) Restoration Goals.”

“Two-year milestones” means the milestones identified by a Bay Jurisdiction and/or EPA that describe specific actions and controls to be implemented to reach the Chesapeake Executive Council’s goal that all practices necessary for restored Bay water quality be in place.

soon as possible, but no later than 2025, as further described in the EPA letter signed by Acting Regional Administrator William C. Early, dated November 4, 2009, and as may be further described in other communications from the Regional Administrator to the Principals Staff Committee of the Chesapeake Bay Program.

“Watershed Implementation Plans” means plans the Bay Jurisdictions develop to achieve and maintain the Bay TMDL’s nitrogen, phosphorus and sediment allocations, as described in the EPA letter signed by Acting Regional Administrator William C. Early, dated November 4, 2009, and as may be further described in other communications from the Regional Administrator to the Principals’ Staff Committee of the Chesapeake Bay Program.

III. EPA ACTIONS

A. Chesapeake Bay TMDL Establishment

1. By December 31, 2010, pursuant to 33 U.S.C. §§ 1313(d) and 1267, EPA will establish the Bay TMDL.
2. The Bay TMDL will, among other things:
 - (a) account for nutrient and sediment loadings to the Bay and its tidal tributaries from within the Bay Watershed and be established at levels necessary to implement water quality standards for dissolved oxygen, water clarity, submerged aquatic vegetation, and chlorophyll *a*, as applicable and in place when EPA establishes the Bay TMDL, to each impaired segment of the Chesapeake Bay and its tidal tributaries on the currently applicable Section 303(d) lists;
 - (b) be developed using information provided by the Bay Watershed Jurisdictions in response to EPA’s November 3, November 4, and December 29, 2009 letters;
 - (c) contain wasteload allocations (WLAs) for point sources and load allocations

(LAs) for nonpoint sources for each impaired segment of the Bay and its tidal tributaries on currently applicable Section 303(d) lists, consistent with EPA's September 11, 2008 and November 4, 2009 letters to the PSC;

(d) be supported by information, including but not limited to, documentation the kind identified on pages 2 and 3 of Enclosure A to EPA's September 11, 2008 letter describing the Bay TMDL's "reasonable assurance and implementation framework" that demonstrates nonpoint source loading reductions will be achieved as a condition for reflecting such reductions in the wasteload allocations in the Bay TMDL;

(e) reflect EPA's decisions regarding the sufficiency of the demonstration of reasonable assurance and other commitments in the seven Bay Watershed Jurisdictions' Watershed Implementation Plans and two-year milestones provided by the jurisdictions;

(f) include an allocation for new or increased permitted discharges of nutrient and sediment or a provision that such new or increased permitted discharges will be offset by quantifiable and accountable reductions necessary to implement applicable water quality standards in the Bay and its tidal tributaries. Any such offsets would in all cases account for the entire delivered nutrient and sediment load after accounting for location of the sources, delivery factors affecting pollutant fate and transport, equivalency of pollutants, and the certainty of such reductions and would not cause an exceedance of local water quality standards or local TMDLs.

3. EPA will account for air deposition of nitrogen to the Bay and its tidal tributaries within the load allocation portion of the Bay TMDL. EPA will take into account air deposition reductions, resulting from regulations already in place or planned, in developing the load

allocations for the Bay TMDL. With the establishment and adoption of each new set of federal two-year milestones (see Paragraph 8), EPA will reevaluate ongoing and planned CAA regulations and actions for reducing nitrogen emissions and deposition and consider whether additional actions, consistent with EPA statutory authorities, are warranted. As part of its federal two-year milestone process, EPA will communicate to the Bay Watershed Jurisdictions the results of its actions under this Paragraph.

4. Prior to December 31, 2010, EPA will publish notice of a proposed Bay TMDL for public review and comment. EPA will include in this publication the Bay TMDL's proposed wasteload and load allocations and its supporting technical and policy assumptions. EPA will also make available for public review the Bay Jurisdictions' Watershed Implementation Plans and two-year milestones, to the extent they are available to EPA. EPA will also identify potential actions, including but not limited to those identified in EPA's December 29, 2009 letter to the PSC, EPA may take in the event that the Bay Watershed Jurisdictions do not submit adequate Watershed Implementation Plans or fail to meet their established two-year milestones.

B. Chesapeake Bay TMDL Implementation

5. Consistent with its November 4, 2009 letter, EPA expects the Bay Watershed Jurisdictions to submit final Phase I Watershed Implementation Plans as expeditiously as possible, and no later than November 29, 2010, and final Phase II Watershed Implementation Plans as expeditiously as possible, and no later than November 1, 2011.

6. Every two years, consistent with the two-year milestone process, EPA will review the progress made by the seven Bay Watershed Jurisdictions with regard to (1) their Watershed Implementation Plan commitments to address program gaps and make reasonable progress

towards achieving the pollutant loading reductions identified in the Bay TMDL and (2) their two-year milestone commitments. This biennial review will begin in 2011. On a continuous basis, EPA will also review the timeliness and content of certain draft NPDES permits in the Watershed as described in Section C. of this Agreement.

7. Consistent with its December 29, 2009 letter, EPA will, as it deems necessary, take appropriate action to ensure that the Bay Jurisdictions (1) develop and implement adequate Watershed Implementation Plans and two-year milestones related to nutrients and sediment, demonstrate satisfactory progress toward achieving nutrient and sediment allocations established in the Bay TMDL in a manner consistent with the expectations expressed in EPA's November 2009 letter, (3) achieve their two-year milestones, and (4) issue NPDES permits consistent with the Bay TMDL's wasteload allocations.

8. By May 1, 2011, and every two years after that, EPA will announce two-year milestones for federal actions designed to reduce nutrient and sediment pollutant loadings to the Bay. EPA will invite other federal agencies to participate in a process, and EPA will coordinate the process among any agencies that choose to participate, with the goal of creating a series of two-year milestones, to commence in May 2011, designed to reduce nutrient and sediment pollutant loadings to the Bay. Consistent with the Executive Order Sections 202 and 203 and the Draft E.O. Strategy, EPA will strengthen stormwater practices on federal facilities and on federal lands.

C. NPDES Permit Oversight

9. a. Between the effective date of this Settlement Agreement and December 31, 2017, EPA will conduct a review pursuant to 33 U.S.C. § 402(d) of all proposed new or revised

NPDES permits for significant point source discharges of nitrogen, phosphorous, and sediment in the Chesapeake Bay Watershed to determine whether the proposed permits include effluent limitations consistent with (as applicable) the respective water quality standards for the Chesapeake Bay and its tidal tributaries of the District of Columbia, Delaware, Maryland and Virginia for dissolved oxygen, water clarity, submerged aquatic vegetation, and chlorophyll *a*, in place at the time of review and (when issued) the Bay TMDL WLAs and relevant jurisdiction Watershed Implementation Plans. EPA will supplement its review of significant permits under this Paragraph with the implementation of the Tracking and Accounting System described in Paragraph 11 with the goal of ensuring that, individually or in the aggregate, they do not cause or contribute to the exceedence of the Bay TMDL's wasteload allocations or applicable water quality standards.

b. As part of the review described in Paragraph 9.a., EPA will review all proposed construction general permits drafted by Bay Watershed Jurisdictions. In conducting this review, EPA will evaluate whether such proposed permits ensure compliance with applicable water quality standards and are consistent with all applicable federal and state requirements, including federal effluent limitations guidelines, new source performance standards, existing local TMDLs, and any requirements developed in the rulemaking described in Paragraph 12.

c. By July 31, 2010, EPA will issue an "MS4 Storm Water Permitting Approach for the Chesapeake Bay Watershed" that will identify the key regulatory and water quality performance expectations EPA will consider when reviewing new or reissued draft state MS4 permits.

d. EPA will take final action on a final NPDES permit for the Blue Plains WWTP by June 1, 2010, provided that EPA concludes that issuance by that date would be appropriate after considering the Agency's responsibilities under section 7 of the Endangered Species Act. If, after considering the Agency's responsibilities under section 7 of the Endangered Species Act, EPA concludes that issuance at a date later than June 1, 2010 would be appropriate, EPA will issue the final permit expeditiously following its conclusion that issuance would be consistent with the Endangered Species Act, and taking into account any steps that EPA determines appropriate in light of the results of consultation with NMFS.

e. Notwithstanding any provisions of Paragraph 9.d., if the results of consultation with NMFS reveal that NMFS believes issuing the NPDES permit for the Blue Plains WWTP would likely jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species designated as critical by NMFS, EPA does not commit to issue a final NPDES permit for the facility by any date.

f. EPA will monitor implementation of compliance schedules in any NPDES permits or enforcement orders for significant municipal and industrial wastewater discharge that require installation of advanced nutrient removal technology in order to meet Bay TMDL wasteload allocations or local water quality-based effluent limits for nutrients and/or sediment. EPA will, as it deems appropriate and consistent with the CWA and EPA's implementing regulations, exercise its discretionary authority to take action to ensure timely installation of advanced nutrient removal technology and report on its actions to Plaintiffs as provided in Paragraph 10.

10. EPA will provide Plaintiffs the opportunity to meet with EPA no less than once every calendar year to discuss the status of EPA actions under this agreement.

11. Within thirty days of the establishment of the Bay TMDL, EPA will begin to implement a Tracking and Accounting System to provide EPA, the Bay Watershed Jurisdictions, and the public with information about load and wasteload allocations and how the Bay TMDL is being implemented. The system will track progress toward attaining the wasteload and load allocations established in the Bay TMDL and the maintenance of the load caps. The system will track the incorporation of the assigned wasteload allocations into new and renewed significant NPDES permits and the achievement of the TMDL's load allocations. For wasteload allocations to non-significant point sources and load allocations to nonpoint sources, the system will account for those sources at the same scale at which the TMDL allocation was established. For example, if the TMDL allocation to such a source is established as an aggregated load, the system will track the progress of achieving that load on an aggregated basis. If a state that administers the NPDES permit program fails to achieve any wasteload allocation (including but not limited to aggregate wasteload allocations), EPA reserves its discretionary authority to revoke the waiver of review for non-major NPDES permit(s) as provided in the respective EPA-State memoranda of agreement to administer the NPDES Permit Program. The Tracking and Accounting System will be publicly accessible and provide information about the status of individual significant and general NPDES permits, as well as the progress being made to meet the Bay TMDL's aggregate wasteload and load allocations.

D. EPA Rulemakings

12. By September 30, 2011, EPA will propose a regulation under section 402(p) of

the Clean Water Act to expand the universe of regulated stormwater discharges and to contain, at a minimum, stormwater discharges from newly developed and redeveloped sites. As part of rulemaking, EPA will also propose revisions to its stormwater regulations under the Clean Water Act to more effectively achieve the objectives of the Chesapeake Bay TMDL. In developing the proposed rule, EPA will consider the following elements related to stormwater discharges both nationally and in the Bay watershed: (1) additional requirements to address stormwater from newly developed and redeveloped sites; (2) requiring development and implementation of retrofit plans by MS4s to reduce loads from existing stormwater discharges; and (3) expand the definition of regulated MS4s. EPA will take final action on the regulation by November 2012.

13. By June 30, 2012, EPA will propose revisions to its Concentrated Animal Feeding Operations (CAFO) regulations under the Clean Water Act to more effectively achieve the objectives of the Chesapeake Bay TMDL. EPA will propose expanding the universe of CAFOs by means which might include (but are not limited to) making it easier to designate an AFO as a CAFO or increasing the number of animal operations that would qualify as CAFOs. EPA will also propose more stringent permitting requirements for land application of manure, litter and process wastewater. In developing the proposed rule, EPA will consider the following: (1) requiring permitted CAFOs to implement “next generation” nutrient management plans; and (2) requiring off-site manure transfer reporting and recordkeeping. EPA will take final action on the CAFO regulation by June 30, 2014.

E. Other EPA Actions

14. By June 30, 2013, EPA will review the management plans and management

measures developed by the District of Columbia, Maryland, Pennsylvania, and Virginia pursuant to section 319 of the Clean Water Act and section 6217 of the Coastal Zone Act Reauthorization Amendments (“CZARA”) to identify whether such plans and measures are consistent with the Bay TMDL and the respective jurisdiction’s Watershed Implementation Plans. Following each review, EPA will identify in writing to each jurisdiction, as appropriate, where its management plans and management measures are not consistent with the Bay TMDL and the jurisdiction’s Watershed Implementation Plans.

15. By December 15, 2012, EPA will review each Bay Watershed Jurisdiction’s technical standards for CAFOs and identify in writing to the respective jurisdiction, as appropriate, where its technical standards are not consistent with 40 C.F.R. § 412.4(c)(2).

16. EPA will consider using existing residual designation authority, 40 CFR § 122.26(a)(9)(i)(C) and (D), for reducing pollutants from stormwater discharges in the Bay Watershed.

17. By June 30, 2013, EPA will develop a model state program for reducing individual and estimating cumulative nitrogen loadings from onsite systems, including conventional and alternative septic systems.

18. Consistent with 33 U.S.C. § 1267(g) and the authorities of the Chair of the Committee, as identified in the Executive Order, the Administrator, or her designee, will coordinate Committee management and oversight of the development and implementation by the Departments of Commerce and Interior of any programs, plans, and activities, such as oyster restoration, that those agencies may undertake pursuant to the Executive Order to protect habitat and living resources associated with the Chesapeake Bay ecosystem.

19. EPA will continue to implement actions to address pollution of the Bay from chemical contaminants in the Bay Watershed, and maintain a particular focus on the Elizabeth River and Anacostia River watersheds, previously identified as Regions of Concern in the E. By November 2012, EPA, carefully considering any information it may receive from other federal agencies and other scientific and state partners, will examine existing monitoring information from regional and national programs and compare existing toxicity benchmarks to the monitoring results. In November 2012, after coordinating with the Chesapeake Executive Council, EPA will issue a report summarizing this information. The report will also include an assessment of the progress of management actions taken to date pursuant to the Chesapeake Basinwide Toxins Reduction and Prevention Strategy. This information will be used to inform chemical contaminant outcomes to be developed in calendar year 2013 as strategic goals for the Chesapeake Bay Program and its partners to address. By 2015, EPA, after carefully considering any input it may receive from the Department of Interior, states and stakeholders, will complete and begin implementing an updated toxics management strategy for the Bay Watershed to further implement the goal of reducing or eliminating the effluent discharge of chemical contaminants from all controllable sources to levels that result in no toxic or bioaccumulative impact on the living resources of the Chesapeake Bay ecosystem or on human health.

20. By July 1, 2010, EPA will invite and encourage the U.S. Department of Agriculture (USDA) to cooperatively develop and implement a plan, the goal of which would be to: (a) expand the use of conservation practices in the high priority watersheds in the Bay; (b) collaborate in development of next generation conservation planning tools with other federal, state, agricultural and research partners; and (c) align EPA programs and resources with US

efforts to achieve water quality improvements by developing tools and technologies to help farmers meet their conservation and farm operation objectives.

IV. MODIFICATION AND TERMINATION

- A. The parties may modify any deadline or other term of this agreement in writing.
- B. This Settlement Agreement will terminate on December 31, 2017.

V. RELEASES, DISMISSAL AND REMEDIES

A. This Settlement Agreement shall constitute a complete and final settlement of all claims which were asserted, or could have been asserted, by Plaintiffs against the United States in the complaint filed in this case.

B. Plaintiffs hereby release, discharge, and covenant not to assert (by way of the commencement of an action, the joinder of the Administrator and/or EPA in an existing action, or in any other fashion) any and all claims, causes of action, suits or demands of any kind whatsoever in law or in equity which they may have had, or may now or hereafter have, against the United States based upon matters which were asserted, or could have been asserted, by Plaintiffs in the complaint filed in the lawsuit styled as *Fowler v. United States of America*, Case No. 1:09-CV-00005 (CKK), provided, however, that nothing in this Paragraph V.B. shall affect Plaintiffs' remedy under Paragraph V.D., below.

C. Upon signature of this Settlement Agreement by both Parties, Plaintiffs shall file a motion for voluntary dismissal without prejudice of the lawsuit styled as *Fowler v. United States of America*, Case No. 1:09-CV-00005 (CKK), provided, however, that Plaintiffs shall be barred from reinstituting that lawsuit except pursuant to the terms and on the conditions specified in Paragraph V.D., below.

D. In the event of a disagreement between the Parties concerning the interpretation or performance of any aspect of this Settlement Agreement, the dissatisfied Party shall provide the other party with written notice of the dispute and a request for negotiations. The Parties shall meet and confer in order to attempt to resolve the dispute within 30 days of the written notice, or such time thereafter as is mutually agreed. If the Parties are unable to resolve the dispute within 60 days of such meeting, Plaintiffs' sole remedy is to reinstitute the lawsuit styled *Fowler v. United States of America*, Case No. 1:09-CV-00005 (CKK) to seek an order from the Court pursuant to the Clean Water Act, the Administrative Procedure Act, or the Chesapeake Bay Settlement Agreement to obtain the same action or actions identified in this Settlement Agreement. Except as provided in Paragraph V. F., EPA does not waive or limit any defense relating to such litigation. The Parties agree that contempt of court is not an available remedy under this Settlement Agreement.

E. The Plaintiffs' sole remedy concerning any final action taken by EPA pursuant to this Agreement is to seek judicial or administrative review of such final action. Nothing in this Settlement Agreement shall be construed to limit any defenses EPA may have to any such challenge or to confer on this Court jurisdiction to review such action where it would otherwise be lacking.

F. The parties agree that, if Plaintiffs reinstitute suit within 120 days of invoking dispute resolution procedures of Paragraph V. D., the time between execution of this Settlement Agreement and any such reinstitution of suit (the "Tolling Period") will not be included in calculating any statute of limitations applicable to the claims as to which Plaintiffs invoked dispute resolution procedures of Paragraph V. D. (the "Tolled Claim(s)"). The United States

agrees not to assert, plead, or raise any defense or avoidance based on the running of any statute of limitations, or any defense or avoidance based on laches or other principles concerning the timeliness of commencing a civil action, based on the failure of Plaintiffs to reinstitute suit as to any Tolloed Claim(s) at any time during the Tolling Period.

VI. SAVINGS PROVISIONS

A. Nothing in this Settlement Agreement shall be construed to limit or modify the discretion accorded to EPA by the Clean Water Act or by general principles of administrative law, nor shall it in any way be deemed to limit EPA's discretion in taking any final agency action or adopting any rule, policy, or guidance.

B. Nothing in this Settlement Agreement shall be construed to limit or modify EPA's discretion to alter, amend or revise any regulations, guidance, policy, or interpretation EPA may issue in accordance with, or on matters related to, this Settlement Agreement from time to time or to promulgate or issue superseding regulations, guidance, policies, or interpretations, or to limit any right that Plaintiffs may have to seek judicial or administrative review in a subsequent case of any such action by EPA.

C. To the extent this Agreement provides that EPA will request, recommend, or otherwise encourage any jurisdiction or federal agency (other than EPA) to take any action, or provide any information, the parties agree that the jurisdiction's or agency's failure to comply with EPA's request, recommendation, or encouragement shall not constitute a breach of this Agreement by EPA.

D. No provision of this Settlement Agreement shall be interpreted as or constitute a commitment or requirement that EPA obligate or pay funds in contravention of the

Anti-Deficiency Act, 31 U.S.C. § 1341, or take actions in contravention of the Administrative Procedure Act, 5 U.S.C. §§ 551-559, 701-706, the Clean Water Act, or any other law or regulation, either substantive or procedural.

E. The possibility exists that circumstances outside the reasonable control of EPA could delay compliance with deadlines stated in this Settlement Agreement. Such situations include, but are not limited to, a government shut-down such as occurred in 1995 and 1996, catastrophic environmental events requiring immediate and/or time-consuming response by EPA. Should a delay occur due to such circumstances, any resulting failure to meet the deadlines set forth herein shall not constitute a failure to comply with the terms of this Settlement Agreement and any deadlines shall be extended one day for each day of the delay. EPA will provide the Plaintiffs with notice as soon as is reasonably possible under the circumstances in the event EPA invokes this term of the Settlement Agreement and will provide Plaintiffs with an explanation of EPA's basis for invoking the provisions of this Paragraph.

VII. NOTICES

A. Any notices required or provided for by this Agreement shall be in writing, and shall be deemed effective (1) upon receipt if sent by U.S. Post or (2) upon the date sent if sent by overnight delivery, facsimile, or email. In addition, to be effective, any such notice must be sent to the following:

For EPA:

Associate General Counsel
Water Law Office (2355A)
U.S. Environmental Protection Agency
Ariel Rios Building - North
1200 Pennsylvania Avenue, N.W.

Washington, D.C. 20460

For DOJ:

Chief, Environmental Defense Section
U.S. Department of Justice
Environment and Natural Resources Division
P.O. Box 23986
Washington, D.C. 20026-3986

For Plaintiffs:

Jon A. Mueller
Vice President for Litigation
Chesapeake Bay Foundation, Inc.
6 Herndon Ave.
Annapolis, MD 21403

VIII. MISCELLANEOUS PROVISIONS

A. Each undersigned representative of the Parties to this Settlement Agreement certifies that he or she is fully authorized by the Party to enter into and execute the terms and conditions of this Settlement Agreement and to legally bind such Party to this Settlement Agreement.

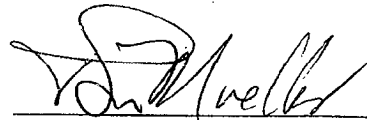
B. This Settlement Agreement is the entire agreement between the Plaintiffs and EPA in this case. To the extent this Settlement Agreement references other documents, those documents are referenced for informational purposes only and are not thereby incorporated by reference into, and do not constitute a part of, this Settlement Agreement. All prior conversations, meetings, discussions, drafts, and writings of any kind are specifically superseded by this Settlement Agreement.

C. It is hereby expressly understood and agreed that this Settlement Agreement was jointly drafted by the Plaintiffs and EPA. Accordingly, the Parties hereby agree that any and all

rules of construction to the effect that ambiguity is construed against the drafting Party shall be inapplicable in any dispute concerning the terms, meaning, or interpretation of this Settlement Agreement.

D. This Settlement Agreement may be executed in any number of counterparts, each of which shall be deemed to constitute an original agreement, and all of which shall constitute one agreement. The execution of one counterpart by any Party shall have the same force and effect as if that Party had signed all other counterparts.

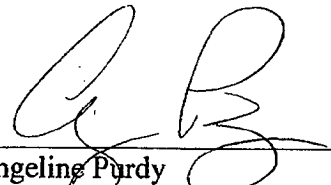
FOR PLAINTIFFS:



Jon A. Mueller
Vice President for Litigation
Chesapeake Bay Foundation,
6 Herndon Ave.
Annapolis, MD 21403

Dated: 5/18/10

FOR EPA:



Angelina Purdy
U.S. Department of Justice
Environment and Natural Resources
Division
P.O. Box 23986
Washington, D.C. 20026-3986

Dated: 5/10/10

Attachment

CBF Letter on New York WIP



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

**Comments from the Chesapeake Bay Foundation on
 New York's Draft Watershed Implementation Plan
 November 4, 2010**

On behalf of the Chesapeake Bay Foundation's (CBF) more than 200,000 members please this letter as formal comment on the *Chesapeake Bay Nitrogen, Phosphorus and Sediment Maximum Daily Loads, New York Draft Phase 1 Watershed Implementation Plan* (WIP) prepared by the New York State Department of Environmental Conservation (DEC). Also incorporate by reference the comments submitted by the Chesapeake Bay Foundation, Cho Clean Water Coalition, and Rebecca Hanmer on the Chesapeake Bay TMDL, Docket no. E R03-OW-2010-0736.

We very much appreciate the dedication of the many state agency staff that contributed to the draft WIP. We further thank the state for the opportunity to comment upon this critical work. Unfortunately, the draft WIP falls far short, not only of achieving the necessary load allocations for nitrogen, phosphorus, and sediment called for in the draft Chesapeake Bay Total Maximum Daily Load (TMDL), but also in providing the necessary reasonable assurance that the proposed policies, and other necessary actions will be put in place by 2025.

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water bodies listings for many watershed states. *See American Canoe v. EPA*, 54 F. Supp. 2d 621 (E.D. Virginia, 1999). On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, with the EPA Administrator, Carol Browner, the *Chesapeake 2000* agreement which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. In the fall of that same year, Governor Pataki of New York entered into a formal agreement to work with the other jurisdictions to "achieve the nutrient and sediment reduction targets...to achieve the goals of a clean Chesapeake Bay by 2010."

In December 2003, the EPA, New York and the other Bay jurisdictions agreed to the nitrogen, phosphorus and sediment allocations that became the basis for "tributary strategies," designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. New York adopted its own tributary strategy in 2006.¹ There, New York observed that "to meet Bay restoration goals, a substantial amount of nutrient reduction from New York is necessary." (p. 18) The strategy noted the waste load and load allocations assigned by the Chesapeake Bay Program and believed that its tributary strategy was a practical means to meet those allocations. (p. 17) However, because the Bay was not de-listed and the failure to achieve that goal triggered the need to develop the TMDL – a process in which New York has been a full participant.

¹ New York State Tributary Strategy for Chesapeake Bay Restoration.

New York has raised concerns about the fairness of the TMDL allocation process. We find these concerns to be unjustified. The TMDL load allocations were equitably and fairly distributed to the Bay jurisdictions, based on the following 3 principles, paraphrased here: 1) the allocated loads should result in attainment of all applicable tidal water quality standards; 2) major basins that contribute the most to the water quality problems must do the most to resolve those problems; and 3) all tracked and reported reductions are credited toward achieving the assigned loads.

In its WIP, DEC complains that “...New York makes up about 10% of the total Bay watershed and receives less than 5% of the total nitrogen allocation to the states. Whereas, Maryland, which makes up about 14% of the total Bay watershed, receives more than 20% of the available nitrogen allocation.” (p. 5) But, when you look at the *reductions* that must be achieved, New York is doing disproportionately less than most other jurisdictions. Using the same comparison of New York and Maryland, New York is responsible for roughly 4% of nitrogen load reductions from a 2009 baseline, whereas Maryland needs to reduce its loads by almost 18%, even though, on a proportional and total load basis, Maryland made greater progress reducing loads from 1985 until the present. In addition, if one looks at reductions needed on a “per acre” basis – NY ranks 6 out of the 7 bay jurisdictions i.e., reductions equivalent to 0.6 lbs N/per acre compared for example with PA and DE who need to achieve reductions of 2.05 and 2.71 lbs/per acre, respectively.

DEC has also argued that the necessary pollution reductions are unachievable for New York. We disagree. Taking nitrogen reductions as an example, New York has to reduce nitrogen pollution by roughly 2.3 million pounds from 2009 levels. Modeling scenarios that simulated the maximum rate of implementation of pollution reduction practices in New York would result in an additional 2 million pounds of N reductions. Hence, what NY is being asked to do, does not equate to doing every practice on every acre of farmland. Furthermore, cleaning up New York’s waters, many of which are also degraded for nutrients and/or sediments, will improve local economies by enhancing recreational opportunities associated with fishing, swimming, etc.

As described in DEC’s most recent Watershed Inventory/Priority Waters List reports for the Susquehanna and Chemung river basins, many of the streams, rivers and lakes are currently degraded due to agricultural activities.² In the Chemung River Basin, sediment and nutrient-related impacts, primarily from agricultural activities, are affecting about one-third of the basin river miles. For the Susquehanna River basin, the impacts are fewer; however, roughly one-third of the rivers and streams in the basin have not been assessed. The list of waterways affected by agriculture includes, but is not limited to:

- Madison County: Payne Brook and tributaries, Lebanon Reservoir, Ostelic River and tributaries
- Broome County: Whitney Point Lake, tributaries to lower Susquehanna River
- Chemung County: Lower/Mainstem Chemung River, Seeley Creek
- Steuben: Cohocton River, Five Mile Creek, Twelve Mile Creek.

Many others waterways are also impacted by silt and sediment erosion. However, only a few of these impacted segments are officially listed on the state’s Section 303(d) list as impaired.

² <http://www.dec.ny.gov/chemical/36746.html> and <http://www.dec.ny.gov/chemical/36734.html>

Reasons for this are twofold, first, as noted above many streams and rivers have not been assessed, and second, the subjective method of listing that DEC employs. By its own admission, “best professional judgment” is used in determining whether waterbodies that violate dissolved oxygen standards should be listed as impaired.³ This approach is overly subjective. The Environmental Protection Agency in their guidance on this issue recommends the states clearly articulate their decision rules regarding listing and reasons for excluding data.⁴ We believe New York’s listing process is flawed, and, in fact, violates the Clean Water Act.

To restore local rivers and streams and, ultimately, the Chesapeake Bay, we strongly encourage the state to provide the necessary details in their WIP for how they will achieve the necessary reductions by 2025, consistent with EPA’s letters to the Principals’ Staff Committee of September 11, 2008, November 4, 2009, and April 2, 2010. New York’s responsibility to develop an adequate WIP that meets the Bay TMDL allocations and provides reasonable assurances of required pollution reductions is founded on the firm requirements of federal law.

The Clean Water Act (CWA or Act)⁵ provides the basis on which the draft WIP must be evaluated. Enacted in 1972 to compel the restoration of the nation’s waters,⁶ the CWA requires the states to establish water quality standards and to take the necessary actions, including taking by upstream states, to ensure that the waters meet those standards, thereby achieving CWA goals.⁷ If a state does not promulgate water quality standards or falls short of CWA requirements in doing so, EPA will set the standards for the state.⁸ The CWA prescribes the use of technology-based effluent limitations for most point sources discharges⁹ and, if those measures do not achieve water quality standards, the Act requires the use of water quality-based controls under Section 303(d).¹⁰

The draft WIP forms part of the CWA’s § 303(d) TMDL program, which requires identification and listing of all impaired water bodies within a state’s borders. For each listed segment, Sections 303 and implementing regulations require the state to establish a TMDL for specified pollutants.¹¹ A TMDL is the maximum amount of a pollutant -- from background, point and nonpoint sources, together with a margin of safety -- that the water body can receive and still attain water quality standards.¹² These requirements apply to both point and nonpoint sources.

³ http://www.dec.ny.gov/docs/water_pdf/asmtmeth09.pdf

⁴ <http://www.epa.gov/owow/tmdl/2006IRG/report/2006irg-report.pdf>

⁵ 33 U.S.C. §§ 1251, *et seq.*

⁶ 33 U.S.C. §§ 1251(a)(2) and 1313(c)(1) (CWA goal is to “restore and maintain the chemical, physical and biological integrity of the Nation’s waters”).

⁷ 33 U.S.C. §§ 1251(a), 1312, 1313; 40 C.F.R. §§ 122.44, 130.3, 131.2.

⁸ 33 U.S.C. §§ 1303(b), (c)(3)-(4).

⁹ 33 U.S.C. § 1311(b)(1).

¹⁰ 33 U.S.C. § 1313(d).

¹¹ 33 U.S.C. § 1313(d)(1)(C). Development of a TMDL is mandatory when triggered by the CWA. *See Nat. Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on Congress’s use of the word “shall” in Section 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs).

¹² *See* 33 U.S.C. § 1313 (d)(1)(C). Effluent limits in NPDES permits must be consistent with “assumptions requirements” of any “available waste load allocation” in an approved TMDL. 40 CFR § 122.44(d)(1)(vii)(B).

pollution.¹³ When triggered by CWA requirements, the states and EPA are required to establish a TMDL, as courts have recognized.¹⁴

Once a TMDL is established and approved by EPA, the affected states must adequately implement it to ensure water quality goals are attained. Thus, CWA § 303(e)(1) requires each state to have a continuing planning process that results in implementation plans for all navigable waters within state boundaries, which include effluent limitations and compliance schedules as required, § 303(d) TMDLs for pollutants, and “adequate implementation, including schedules of compliance, for revised or new water quality standards,” including those of downstream states.¹⁵ Resort to a TMDL is the CWA’s “backup” strategy for achieving water quality standards; it is invoked when point source permits and best management practices (BMPs) for non-point sources (NPS) have not succeeded.¹⁶ Accordingly, EPA may only approve a state-submitted implementation plan that provides assurances it will succeed in “implement[ing] applicable water quality standards.”¹⁷

What constitutes reasonable assurances will vary depending on the water body and the pollution sources at issue.¹⁸ In the case of TMDLs for waters impaired only by point sources, National Pollutant Discharge Elimination System permitting may be sufficient to provide reasonable assurance that the TMDL’s waste load allocations will be achieved. For waters impaired by both point and nonpoint sources, a TMDL may not allocate WLAs based on an assumption that NPS load reductions will occur unless the TMDL provides reasonable assurances that NPS control measures will achieve expected load reductions.¹⁹ The bottom line is clear, however: To carry out CWA’s command to ensure water quality standards are attained, EPA must be able to determine that a plan’s claimed load allocations are not based on excessively optimistic hopes concerning the amount of NPS pollutant reductions that will occur. “If the reductions embodied in load allocations are not fully achieved because of a failure to fully implement needed NPS controls, the collective reductions from point and NPS will not result in attainment of the water quality standards.”²⁰

The current draft WIP from New York does not satisfy the requirements of the Clean Water Act. For one, it fails to achieve the necessary allocations for nitrogen, phosphorus and sediment and two, it fails to provide the necessary reasonable assurance that the required reductions will be achieved.

¹³ *E.g.*, *Pronsolino v. Nastri*, 291 F. 3d 1123 (9th Cir. 2002).

¹⁴ *E.g.*, *Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y.1995) (EPA must establish TMDLs based on Congress’s use of the word “shall” in CWA § 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs); *Sierra Club v. Hankinson*, 939 F. Supp. 872, 873 (N.D. Ga. 1996) (To attain CWA goals, EPA must ensure that TMDLs are implemented).

¹⁵ See 33 U.S.C. §§ 1251(a), 1313(e)(1) and 1313(e)(3)(C),(F); 40 C.F.R. Part 130.6(b),(c) (TMDLs must be included in Water Quality Management Plans used to direct implementation).

¹⁶ See 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. 130.7(b)(1).

¹⁷ See 33 U.S.C. § 1313(d)(2).

¹⁸ See *Guidelines for Water Quality-Based Decisions: The TMDL Process* (EPA Office of Water Regulations and Standards) (“1991 Guidance”).

¹⁹ *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992*, U.S. E.P.A. (2002), available at <http://www.epa.gov/owow/tmdl/guidance/final52002.html>.

²⁰ See Correspondence, dated November 9, 2009, from EPA to xx at 5.

We sincerely hope that the final WIP submitted to EPA is sufficient, so as to avoid the need for EPA to invoke the “backstop” provisions in its proposed TMDL.

Sincerely,

A handwritten signature in black ink, appearing to read "Beth McGee". The signature is fluid and cursive, with the first name "Beth" and last name "McGee" clearly distinguishable.

Beth L. McGee, Ph.D.
Senior Water Quality Scientist

Attachment

CBF Letter on Pennsylvania WIP



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

8 November 2010

Via email

Pennsylvania Department of Environmental Protection
 Rachel Carson State Office Building
 Water Planning Office
 P. O. Box 2063
 Harrisburg, PA 17105-2063

RE: Comments regarding Pennsylvania's draft Chesapeake Watershed Implementation Plan (WIP); September 2010

Dear Department of Environmental Protection:

The Chesapeake Bay Foundation (CBF), and its more than 200,000 members, thank the Department of Environmental Protection (DEP) for developing and implementing a thorough and open stakeholder process for constructing the Watershed Implementation Plan (WIP). We look forward to a finalized WIP that includes the Best Management Practices (BMPs) necessary to meet the reduction requirements, but also includes the implementation capacity to assure that the BMPs are put "on the ground." It must equitably require nutrient and sediment reductions from across all sectors. The WIP must outline the mechanisms, and commit programmatic and financial resources to meet the goals, to provide reasonable assurance that the WIP can be implemented, and to restore Pennsylvania's waters and the Chesapeake Bay.

As you know, the process of developing the Bay-wide Total Maximum Daily Load (TMDL) actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water listings for many watershed states. *See American Littoral Society v. EPA, Case No. 96-489 (E.D. April 9, 1997); American Canoe v. EPA, 54 F. Supp. 2d 621 (E.D. Va. 1999)*. On 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of

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Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, with the EPA Administrator, Carol Browner, the *Chesapeake 2000 Agreement* which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010.

In December 2003, the EPA, Pennsylvania, and the other Bay jurisdictions agreed to the nitrogen, phosphorus and sediment allocations that became the basis for “tributary strategies,” designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. Pennsylvania completed their plan in 2004.¹ The failure to achieve the goal triggered the need to develop the Bay TMDL – a process in which Pennsylvania has been a full and cooperative participant.

Consistent with EPA’s letters to the Principals’ Staff Committee of September 11, 2008, November 4, 2009, and April 2, 2010, we strongly encourage the state to provide the necessary details in their WIP for how they will achieve the necessary reductions.

While Pennsylvania has made significant progress on some specific BMPs, the Commonwealth has demonstrated an inability to deliver on core programmatic items that are critical to meeting our water quality goals. This WIP is Pennsylvania’s final opportunity to create a strategy for implementing the TMDL that is built by Pennsylvanians, for Pennsylvania, and utilizes the details and efficiencies that are specific to the Commonwealth. CBF urges you to consider the following recommendations to construct a credible strategy to accomplish the necessary reductions. Otherwise, the Federal Government will use its Clean Water Act authorities to attempt to accomplish those reductions in Pennsylvania. The outcomes of that approach will be for more difficult and less efficient for the Commonwealth and its citizens.

EPA’s assessment of the Pennsylvania WIP was not good. The agency cited numerous “significant deficiencies” that if not corrected would result in EPA invoking—under existing Clean Water Act authority—several “backstop” measures.²

¹ Pennsylvania’s Chesapeake Bay Tributary Strategy. Prepared by the Pennsylvania Department of Environmental Protection. December 2004.

² EPA Comments on the Pennsylvania Draft Phase I Watershed Implementation Plan, September 27, 2010. http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/WIPEVALUATIONS/PortfolioOfDraftWIPs.pdf

A central criticism by EPA was the conclusion that Pennsylvania did not develop a credible and justifiable plan to reduce pollution from farms and urban and suburban developments. Without meaningful reductions from these sectors, Pennsylvania will not achieve the pollution reductions required by the TMDL.

The ramifications of failure, and the implementation of the “backstop” measures and the other consequences, detailed in EPA’s December 29, 2009 letter to the Bay states, threaten to profoundly impact Pennsylvania communities, farmers and businesses in many significant ways.

In order to avoid EPA imposing the TMDL “backstops” and the other consequences, we strongly encourage DEP to fully integrate our comments and suggestions into the draft Phase I WIP.

Also, we incorporate by reference the comments submitted by CBF and the Choose Clean Water Coalition and Donald Boesch, et al. to Administrator Jacoloni on November 8, 2010, Docket no. EPA-R03-OW-2010-0736.

Key Recommended Improvements

Detailed in our comments herein are numerous recommendations for improving the draft WIP, particularly as it pertains to the reasonable assurance EPA seeks. In summary, we believe that the draft WIP should incorporate the following:

Agriculture

- Describe a strategic plan containing binding commitments for the state that reasonably achieves agriculture’s load allocation within the TMDL’s timeline and which includes sufficient contingencies if specific program elements cannot be implemented.
- Inform all producers of regulatory and TMDL-related requirements.
- Implement outreach, financial assistance, and enforcement activities to assure widespread compliance.
- Identify overall funding need, and remaining funding gaps that must be filled by the Commonwealth.

- Pursue core conservation measures first on farms that have not yet participated; “the basics” provide cost effective nutrient reductions.
- Integrate state efforts on alternative manure technologies with compliance efforts on small and medium farms, especially dairies.
- Invest state and federal funds in forested buffers of at least 35 feet; narrower or grass buffers should not be a subsidized priority.
- Maximize landowners’ use of CREP for buffers to stretch other limited cost share programs farther.
- Advocate to restore and grow the REAP tax credit program.
- Advocate to restore and rebuild conservation district capacity.
- Develop a comprehensive methodology to track voluntary BMPs that reduce nutrient and sediment loads, as well activities (by all sectors) that increase nutrient and sediment loads.
- Commit to timeline for establishing criteria for TMDL level compliance and “Safe Harbor.”
- Commit to timeline for establishing a plan for achieving phosphorus balance over the long term and that is sufficiently protective of water quality.
- Strengthen the private sector’s role in providing planning and design services to producers.
- Coordinate efforts effectively to ensure all cooperating agencies and organizations are working on goals that are consistent with the WIP.

Urban/Suburban Stormwater

- Abandon the proposed MS4 methodology in favor of the approach employed in the Christina River Basin Watershed Stormwater Source TMDL.

- Revise permit requirements so as to incorporate no net increase provis for new or expanded discharges of construction, post-construction stormwater runoff.
- Revise Act 167 to fully incorporate stormwater-related LA and WLA allocations and reduction goals and practices.
- Revise Pennsylvania's Stormwater Best Management Practices Manual as to incorporate the small storm hydrology management approach.
- Develop and advocate for innovative, but scientifically justifiable, approaches to address and fund stormwater retrofits and impervious surface reductions in existing urban and suburban areas, including the examination of an offsets program.
- Develop a meaningful MS4 permitting program which requires the adoption of low impact development (LID) requirements, tree and urban/suburban woodland protection ordinances, and retrofitting programs, amongst other improvements.
- Advocate for a ban on the sale of phosphorus-based fertilizers intende use by homeowners, except under certain conditions.

Resource Extraction

- Develop a process to track and quantify the impact of land-based Mar Shale-related drilling activities (e.g., pads, roads, clearing of forest, etc incorporate into the WIP.
- Revise permit requirements to incorporate no net increase provisions new or expanded discharges of construction, post-construction storm runoff from extractive industries, including Marcellus Shale.

Onsite Wastewater

- Close the septic system “loop hole” regarding no net increases in pollutant loads from new or expanded sewage discharges and institute an offsets program.

Sector Specific Comments

Throughout various sections of the draft WIP, numerous aspects of DEP’s programs, permits, and methodologies for incorporation into the TMDL and WIP are presented. This presentation approach makes it difficult to provide meaningful comment via a sequential approach. Therefore, for ease of presentation we provide our comments below on a per sector basis and not sequentially as presented in the draft WIP.

However, in general, the issues and concerns we raised in our August 12, 2010 letter to the Pennsylvania WIP team members remain (Attachment A). Specific comments for each sector are below.

Agriculture

CBF supports DEP’s commitment to reducing pollution from agriculture in ways that strengthen the sector overall, and helping individual producers maintain or regain profitability in the process. A robust agricultural sector in Pennsylvania is critical to PA watersheds and the Bay. That developed land is the only sector still increasing pollution loads underscores the fact that farms and forests are much preferable to development, especially the highly land-consumptive growth that has occurred in the region over the past several decades.

DEP and other Pennsylvania agencies and partners have developed and pursued creative approaches to achieving agricultural nutrient reductions to augment on-going efforts. These initiatives include nutrient credit trading, state enhancements to CREP, innovative manure technologies, REAP transferrable tax credits, ARRA and PENNVEST nonpoint source projects, county assessments of voluntary BMPs, and others. We are hopeful that a new tracking program for voluntary BMPs will reveal more progress made by producers that has not yet been credited to the agricultural community.

Nevertheless, PA farms continue to generate substantial nutrient and sediment loads, and sufficiently reducing this sector’s loads is the most critical aspect of Pennsylvania’s WIP. The final WIP must clearly outline a strategic plan for agriculture that includes specific commitments of technical and financial

resources with measurable goals and timelines. The draft WIP for agriculture not contain sufficient detail to provide reasonable assurance to EPA that necessary agricultural reductions will be achieved, nor did it give PA policymakers a clear roadmap for funding and program needs. The Chesapeake Bay Foundation agrees with EPA's assessment of serious deficiencies and we provide the following recommendations to correct these deficiencies.

Achieve widespread compliance with state and federal requirements in a timely fashion

The final WIP Agricultural Compliance Plan must identify the process, resources and timelines necessary to inform and assist producers who do not have required plans and BMPs.

Pennsylvania has a solid foundation upon which to work with small and medium-sized farms that are not required to have certified nutrient management plans or Concentrated Animal Feeding Operation permits. DEP deserves much credit for its efforts to revise Chapter 102 regulations on erosion and sedimentation control and the Field Application of Manure Supplement to the Manure Management Manual. Once the latter is completed, producers will have clearer guidance on required planning and implementation measures for both sediment and nutrient control, setting a "level playing field" for the majority of producers and giving them an excellent context for gaining additional nutrient reductions from farms that may have considerable work yet to do.

The draft WIP relies heavily on new BMPs derived from farms developing and implementing required Erosion and Sediment Control Plans and Manure or Nutrient Management Plans. CBF supports this approach as fair and cost-effective. It will focus pre-2017 efforts on implementing "core BMPs" (nutrient management planning, cover crops, riparian buffers, no-till or low-till cultivation) on farms that previously had not established necessary conservation practices versus enhanced BMPs on farms already achieving high standards.

However, regulations mean little if compliance with those regulations continues to lag. Pennsylvania has required conservation and manure plans for almost 20 years, and many farmers are still unaware of these regulations. Indeed, a great number of PA farmers are unfamiliar with these requirements for the very reasons that EPA has criticized PA's draft WIP: DEP has never led, and has still neither described nor committed to, a comprehensive and proactive compliance

effort. The failure of the Commonwealth, through DEP, the Department of Agriculture, Conservation Districts, and others to clearly educate and inform the agriculture sector about compliance has left the Commonwealth's farms vulnerable under state laws to administrative enforcement and citizen action.

While Pennsylvania has no comprehensive database on farm plans, discussions with county and state conservation agency staff suggest that at least half of Pennsylvania farms do not have required erosion control or manure management plans, and the number could be much higher. Recent inspections by EPA in the Watson Run watershed in Lancaster County found that only three of the twenty four farms in the watershed had conservation plans.³ A comprehensive assessment of farming practices in the Chesapeake Bay watershed found that about 26% of cultivated cropland acres across the watershed still need additional erosion control practices and about 81% of these acres require additional nutrient management practices.⁴ Past and current DEP regulatory programs do not appear to be a significant factor in planning decisions for most producers.

The updated requirements for these plans, coupled with the expectations of the TMDL, will require a comprehensive outreach, education and enforcement strategy that details the steps DEP and partners will take to assure that the approximately 40,000 farms in the Chesapeake Bay watershed develop or update these plans and are on implementation schedules for meeting necessary standards for water quality. The final WIP must move beyond what appears to be largely a recitation of existing programs with modest funding and staffing enhancements.

Implementation of the revised Manure Management Manual will lead to significant nutrient reductions, but possibly not sufficient to meet the TMDL goals. If the Manure Management Manual does not yield the performance needed, then DEP must require a higher level, such as certified nutrient management plans on all farms producing livestock.

The draft WIP acknowledges that staff resources are insufficient to assure compliance, but does not provide any meaningful solutions to address this shortage. It proposes to support four new staff positions, that "once fully trained,

³ Crable, Ad, Lancaster Intelligencer Journal and New Era, EPA Discusses Farm Inspections, January 26, 2010

⁴ Natural Resources Conservation Service-USDA, Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Watershed, Review Draft, October 2010.

are expected to result in an increase of 450 agricultural inspections annually, as well as 50 stormwater inspections and 100 compliance actions per year."⁵. At that rate, it would take 89 years after their training to reach all of the approximate 40,000 farms in the watershed. The final WIP needs to provide a strategy for either reaching these 40,000 farms with existing resources as soon as possible or securing new resources for this purpose.

The final WIP must commit to ensuring that sufficient resources for technical and financial assistance will be available so that necessary plans will be developed for the estimated 18,000 livestock farms in the Chesapeake Bay watershed by 2015 and all remaining crop farms by 2018. We provide the following analysis on the necessary staffing resources for planning and outreach. Whether or not the final WIP uses a similar analysis, it must describe in detail how Pennsylvania will provide assurance that needed conservation and manure/nutrient management plans will be done on a timeline that is consistent with TMDL milestones.

Staffing Needs for Compliance Outreach and Assurance – An Analysis

About 2,000 livestock operations already have Nutrient Management Plans, and the remaining 16,000 farms require Manure Management Plans. The Lower Susquehanna Watershed should see the most emphasis initially, because this watershed contributes both the greatest nutrient and sediment loads to the Chesapeake Bay and has greater staff resources. The Lower Susquehanna Watershed contains about 21,000 farms, approximately 10,000 of which have livestock.

Some farms will require only verification that they have current Erosion and Sediment Control or Conservation Plans and Manure Management Plans that are being implemented on schedule. Other farms will require only modest updates to their plans to address water quality concerns. A third set of farms will require more assistance in developing and implementing plans where none currently exist. Anecdotal information suggests that about approximately one third of farms are in each of the three above groups. We estimate that an average (across the various situations described above) of 2.5 days of technical assistance staff time per farm are needed to develop a basic Erosion and Sediment Control plan and a Manure Management Plan in the case of livestock operations.

⁵ Pennsylvania Department of Environmental Protection, Pennsylvania Chesapeake Watershed Implementation Plan, September 2010, page 81.

CBF's assessment of technical resources assumes that agency and private sector employees must reach about 5,000 farms each year, so that developing the necessary plans for all farms in the Chesapeake Bay watershed is achieved within eight years. Eight years to develop the needed plans would provide the framework to establish 60% of the necessary BMPs by 2017 as required by EPA. One staff person (with vacations, holidays, sick time, and training time) could assist about 90 farms annually. This would require 56 full-time staff people, working exclusively on planning assistance to farms in the Chesapeake Bay watershed.

An alternative approach would be to shift priorities of existing staff, with some sacrifices to other programs or priorities. An estimate of the needs under this approach includes:

- 62 Chesapeake Bay Technicians in Conservation Districts, that could spend about 2/3 of their time (140 days/year) on outreach and plan development, with an average of 2.5 days per farm. At this rate, they could develop 3430 plans annually.
- About 50 Nutrient Management Technicians, Erosion and Sediment Control Technicians and other Conservation District staff, that could spend 10% of their time, or about 21 days/year to develop 420 plans per year.
- USDA Natural Resources Conservation Service assistance with approximately 500 plans per year through various programs, such as the Environmental Quality Incentives Program and the Conservation Stewardship Program.
- Eight Department of Environmental Protection regional staff encouraging the most problematic farms to develop the necessary plans immediately, through the private sector if Conservation District staff unavailable. They could reach about 50 farms per year per person, or about 400 total plans per year.
- The private sector's development of an additional 250 plans in the initial year, and more in the future. This sector must play a significant role in plan development and implementation, and their ranks would likely expand with demand, as farms see stronger regulatory requirements or nutrient credit trading opportunities.

- Farms in geographic proximity could be grouped together (possibly with Conservation District assistance) to obtain lower cost bids for planning.
- Additional funding from EPA could support private sector plan development.
- Farms that pollute Pennsylvania's waters should be required to develop and implement the necessary plans immediately, and may need to rely on private sector planners, or face enforcement actions.

According to these estimates of combined technical resources of the public and private sector, about 5,000 farms in the Chesapeake Bay Watershed would have plans each year. Initial efforts should be targeted to livestock operations currently lacking plans. All livestock operations in the Lower Susquehanna watershed should have plans by the third year, and by the fifth year in the rest of the watershed. By the eighth year, all Chesapeake Bay Watershed farms should have an Erosion and Sediment Control plan with a Manure Management Plan where needed, although some may need adjustments. We propose the following timeframe for plan development:

Lower Susquehanna Watershed			Remaining Chesapeake Watershed		
	<i>Livestock farms</i>	<i>Crop farms</i>	<i>Livestock farms</i>	<i>Crop farms</i>	Total
2011	4,000		1,000		5,000
2012	4,000		1,000		5,000
2013	2,000	1,000	2,000		5,000
2014		2,000	3,000		5,000
2015		2,000	1,000	2,000	5,000
2016		3,000		2,000	5,000
2017		3,000		2,000	5,000
2018				5,000	5,000
Total	10,000	11,000	8,000	11,000	40,000

Once farms develop the necessary erosion and sediment control and manure management plans, additional work will be needed to ensure that plans are being implemented, soil erosion is limited to “T” over a rotation, animal concentration areas are correctly managed, buffers are established and maintained, cover crops are planted early enough each year, and other practices are successfully established and maintained. Plan development is just the first step in the process.

Enforcement

The draft WIP describes the planned “Targeted Watershed Approach” which will guide the department’s compliance and enforcement efforts. This approach has many advantages, particularly given limited staffing resources. CBF recommends, however, that the final WIP include a compliance and enforcement strategy that extends beyond targeted watersheds and response to complaints. The final WIP needs to outline a process that will result in all farms complying with state and federal requirements on a timeline consistent with the TMDL.

Thus, in addition to DEP’s efforts in targeted watersheds, the initiative should focus enforcement on farms with obvious and serious water quality problems first. Complaint-driven enforcement of environmental regulations is inadequate because it drives regulatory action to the farms where there are observant neighbors, not necessarily where the greatest pollution risks exist. Throughout the watershed, there are farms that have not participated in voluntary technical and financial assistance, and some of these operations contribute to serious water quality problems. Many of these problems – such as direct barnyard runoff and unmanaged Animal Concentration Areas (ACA’s) near streams - are clearly evident from public roadways. Publicized enforcement on these farms would serve as an incentive to many others to quickly develop the plans and establish the conservation practices needed on their farms to avoid similar regulatory action. EPA’s recent enforcement action on a facility in Manheim, PA illustrates this approach.⁶ Many voices from within agriculture have supported fair but firm enforcement of the state’s Clean Streams Law focused on bad actors first.

CBF supports an emphasis on targeting ag-impaired streams as described in DEP’s draft Agricultural Water Quality Initiative⁷. But we believe that a targeted watershed approach alone will not be sufficient to ensure adequate compliance

⁶ Crable, Ad, Lancaster Intelligencer Journal and New Era, Feds Hit Farm for Pollution, June 2, 2010

⁷ Department of Environmental Protection, Pennsylvania’s Proposed Chesapeake Bay Agricultural Water Quality Initiative, October 1, 2009.

throughout Pennsylvania's Chesapeake Bay watershed. We believe a multi-pronged approach would be most successful, comprised of:

- Inspections of farms in targeted watersheds
- Enforcement on farms with significant pollution problems, regardless of location or broader watershed impairment, especially where the operator has failed to take corrective actions in the past a timely manner
- Randomized compliance visits to a small percentage of farms throughout Pennsylvania each year

Close coordination with conservation districts on these efforts will be necessary. The WIP should describe programmatic options DEP will pursue to encourage and enable individual conservation districts to take a more active role in compliance assurance (versus providing only technical assistance to producers).

Addressing the Funding Gap

A significant challenge not resolved in the draft WIP is how PA will commit to a level of resources, particularly for agricultural financial assistance, that is on par with the need. While the federal government has increased conservation funding through Farm Bill programs, farmer demand for financial assistance consistently and substantially exceeds available funding. On average, about two-thirds of Pennsylvania farmers' applications for Natural Resources Conservation Service (NRCS) financial assistance programs have remained unfunded in recent years. About 2000 Environmental Quality Incentives Program applications were unfunded last year, due to funding shortfalls.⁸ While the state faces historic financial constraints, this does not relieve the state of its obligations under the Clean Water Act. Pennsylvania policymakers did not make sufficient investments in agricultural nonpoint source programs during times of surplus; these were legislative and executive choices that make the current situation all the more difficult. The WIP must describe how this historic funding gap that continues to this day will be corrected.

The final WIP should specify the level of financial and technical assistance needed and what funding streams will be secured, leveraged or appropriated and at what levels. The final WIP must estimate the total expenditure (public and private) necessary for planning and for implementing all the remaining BMPs that will

⁸ Natural Resources Conservation Service staff, State Technical Committee meeting, June 1, 2010.

required to get all farms into compliance and to achieve agriculture's portion of the TMDL. This analysis would logically assume shared contributions from the federal government, the state, and producers themselves. PA's earlier tributary strategy estimated that need at roughly \$215 million dollars per year, for at least seven years. Unfortunately total annual spending on agricultural BMPs never came close to this figure. The final WIP needs to identify the approximate funding need now through at least 2017. Without a clear funding requirement spelled out in the WIP coupled with specific funding streams meeting that level, a key element of reasonable assurance will not be satisfied.

Indeed, the draft WIP reviews past and current expenditures but fails to mention imminent shortfalls and reductions and what steps will be taken to replace lost funding. For example, the draft WIP's section on Growing Greener does not mention that the current round of this foundational funding program is coming to an end just as the Bay TMDL is getting underway nor does it recommend any new funding. The section on the REAP tax credit program states that the program was cut in half with no discussion of restoring or increasing funding for the program.

Funding for County Conservation Districts and Core Conservation

While CBF supports DEP's efforts to fund alternative technologies and manure-to-energy systems, we are concerned that this focus may distract the DEP from ensuring that "the basics" are tended to first, meaning cover crops, buffers, fencing, barnyard treatments, and other BMPs needed for soil and nutrient plan implementation. It is from these practices that PA will derive the lion's share of reductions at the lowest cost. The draft WIP relies heavily on Conservation Districts for delivery of core conservation practices, and places additional responsibilities on staff, without providing additional resources. The final WIP should estimate the additional staffing and resources for the conservation districts to implement the additional outreach, compliance and technical assistance necessary for implementation of the Agricultural portion of the Bay TMDL and provide the necessary increase in future budgets beginning in the 2011-2012 budget. The Pennsylvania Association of Conservation District's budget request for Fiscal Year 2010/2011 of \$10 million is a minimum of the annual allocation needed to provide the staff resources needed to meet the expanding requirements in the draft WIP.⁹

⁹ Pennsylvania Association of Conservation Districts, Inc., "Budget Requests for Conservation Districts, Fiscal Year (FY) 2010/11," submitted to the Pennsylvania General Assembly.

Restoring Funds to the Resource Enhancement and Protection (REAP) tax credit program

This efficient and over-subscribed tax credit program has established a tremendous track record of matching tax credits with private resources to achieve conservation goals. In spite of its effectiveness at supporting conservation goals and leveraging private funds, the allocation to REAP has been cut in half.

While most state programs have seen cuts in the last two budgets, the final WIP must reconcile this reality with the imperatives of the TMDL. Seeing the growing need for agricultural financial assistance, in April of 2008 the PA Fair Share C Water Coalition called on the General Assembly and Governor Rendell to invest \$50 million annually in agricultural assistance (split between \$35 million in REAP and \$15 million in new cost share grants).¹⁰

While committing Pennsylvania to \$50 million in new funding in 2011 may not be realistic for the final WIP, it needs to describe a strategy of “scaling up” state funding for agricultural BMPs between now and 2017. CBF recommends that the allocation for the Resource Enhancement and Protection (REAP) tax credit program be restored to at least \$10 million in FY 2010-11 and increased by \$5 million per year thereafter until unmet demand for financial assistance comes into line with available funding from all sources, and milestones for BMP implementation are being consistently met. It is critical that the Commonwealth maintain consistent funds for the program so that producers can make investments in new BMPs with greater confidence that tax credits will be available when they need them.

Total Maximum Daily Load Compliance and Nutrient Credit Trading

While producers may partially or fully reach TMDL compliance with Nutrient Management Plans and Erosion and Sediment Control plans, it is currently unclear how close compliance with state regulations will bring a farm to TMDL compliance. The final WIP should establish, or commit Pennsylvania to establishing within six months or less, the criteria all farms must meet to achieve compliance with the Bay TMDL as well as adequate protection for local water quality. These criteria would constitute “baseline” after which an operation can generate offset or trading credits. DEP should consider establishing these cri

¹⁰ Coalition Proposes Fair Share Funding Plan to Address Chesapeake Bay and Statewide Water Quality Management. By coalition members: Chesapeake Bay Foundation, PA Farm Bureau, PA Municipal Authorities Association, Association of Conservation Districts, Pennsylvania Builders Association. April 2010

in such a way that enables producers to select from a suite of options based on the type of operation and relevant local conditions.

Clearly specifying criteria for TMDL compliance will be important for planners providing technical assistance to producers. To the greatest extent possible, planners and producers should design Manure Management Plans and Erosion and Sediment Control Plans, and their associated conservation practices, in order to maximize nutrient and sediment reductions. Individual plans designed only to meet state and federal regulatory requirements could be insufficient to cumulatively reduce nutrient and sediment pollution under the TMDL. For example, a farm with contour strips and manure application setbacks from streams may satisfy regulatory requirements, but the addition or substitution of no-till practices, cover crops and riparian buffers may be needed to address water quality goals. Planners will provide a better service to producers if they include these practices at the outset (some of which may be optional for state regulatory compliance) so that farms are not faced with multiple plan revisions at a later date.

Moreover, clear guidance on TMDL compliance for farms will enable DEP to establish standards for “safe harbor” for producers, which we recommend be completed within one year of the final Phase 1 WIP. With safe harbor, producers who achieve an established level of environmental performance and/or BMP implementation would be protected from further requirements for a set period of time, such as three to five years.

Pennsylvania’s current trading policy system of utilizing a subwatershed tradeable load cap does not meet EPA’s trading policy guidelines. The following problems preclude Pennsylvania’s trading program from effectively meeting the reduction goals.

First, the lack of a requirement to meet TMDL compliance prior to trading would likely preclude credit generators in Pennsylvania from participating in multi-state trading, which represents potentially a very profitable scenario for generators.

Second, there is no strategy, resources, or clearly stated requirement for NPS credit generators to come into TMDL compliance after they have reached the current threshold for trading. Moreover, when some operations in a subwatershed have utilized the available credits under the cap – there is no plan

for obtaining the additional reductions from the remaining operations. Will regulatory authority be utilized? Will resources be made available?

Third, there will be problems of inequity if some farms, achieving the same level of compliance, are allowed to trade, and others are not (because the tradeable load cap has been reached in that subwatershed). A related issue is that after tradeable load cap has been met, farms may have to implement more expensive BMPs, at their own expense, after selling more inexpensive credits to buyers. Again, will regulatory authority be used? Will resources be made available?

Phosphorus Management

The current Phosphorus Index allows phosphorus to accumulate in some soil beyond crop needs, and therefore will not adequately protect water quality in the long term. Therefore, the WIP must outline a strategy to revise phosphorus management standards that will be implemented over time to address the problem of excessive phosphorus accumulation. Elements of this strategy may include:

- Revision of nutrient management planning requirements to prevent over saturation of soil phosphorus, such as by reducing the P Index scores where P may not be applied or may be applied at reduced rates, within one year.
- A limit on P application to the rate needed for crop production, based on soil tests and realistic yields, over a specific timeline. For example, the standards could be implemented by 2017 for Concentrated Animal Operations (CAOs) and Concentrated Animal Feeding Operations (CAFOs) and for all farms by 2025.
- Development of new strategies to correct the regional imbalance of phosphorus that results in a heavy influx of this mineral that is a finite natural resource. Pennsylvania must reduce the flow of phosphorus in livestock feeds into the region, and/or develop new strategies to cost-effectively transfer it to locations that need it.

Concentrated Animal Feeding Operations

The proposed plan includes working with EPA Region 3 to improve the CAFO program. The Chesapeake Bay Foundation strongly recommends that the program designate AFOs with discharges as CAFOs, as specified in the federal

CAFO rule. The farms should have an opportunity within a reasonable timeframe to correct the discharges before designation. The goal should be to remove the discharges, rather than expand the number of farms under the CAFO program.

Farms' efforts to prevent CAFO designation would be a valuable tool to address problems such as: livestock directly depositing manure in streams, stormwater flowing from manure management facilities, and other sources of stream degradation. CAFO designation would provide a regulatory tool to address some of the most significant sources of pollution to the Commonwealth's waters.

In Pennsylvania, requiring farms to eliminate discharges or face enforcement proceedings as CAFOs is likely to be a more effective tool to improve water quality than lowering the threshold of animal numbers to include more farms as CAFOs.

USDA Technical Service Provider Program

The Commonwealth should work with the USDA NRCS to develop a broader, more flexible TSP to enable greater private sector delivery of critical conservation programs such as the Environmental Quality Incentives Program (EQIP) and the Chesapeake Bay Watershed Initiative (CBWI). Pennsylvania's private sector agricultural groups should be enabled to play a greater role in providing the critical technical assistance necessary to implement the federal agriculture program dollars.

Improved tracking of all BMPs

DEP does not effectively track nor, therefore, report and model most Best Management Practices (BMPs) that are privately funded and not part of an organized program. Thus, many of these key BMPs are dramatically under-reported. Pennsylvania must incorporate Census of Agriculture data, satellite images (such as for cover crops), and other broad data collection methods with efforts to assure that practices are established according to standards and are being correctly maintained.

- Identifying untracked BMPs could "open the door" to education and outreach on necessary compliance efforts. People trying to assess the untracked BMPs may also provide information about requirements facing farms and refer them to sources of technical and financial assistance.

- Identified farms with superb conservation efforts could be provided information about nutrient credit trading opportunities.

At the same time, Pennsylvania's efforts to better track voluntary Best Management Practices must also track activities from agriculture and all other sectors that *increase* nutrient and/or sediment loads, such as new and expanded livestock operations. For example, the explosive growth in gas development in the Marcellus Shale formation has resulted in loss of forest acreage in northern tier counties. In another example, Amtrak has been clear cutting trees along a mile stretch of the Susquehanna River for electric line maintenance, with no plan for reforestation.¹¹ These losses directly offset gains for two modeled BMPs: tree planting and riparian forested buffers - and must be accounted for in the model.

Innovative Technologies

The draft WIP promotes regional digesters and other technologies, without detailing how they will be financially viable, the fate of nutrients, and how they may be structured and managed. The Chesapeake Bay Foundation supports the development of innovative technologies that hold potential for significant, cost-effective nutrient reductions, but also recommends strong emphasis on "true" cost-effective nutrient reduction methods, with testing of promising new innovations. Moreover, the need for alternative uses for excess manure is most urgent for small dairies with high animal density. DEP's program for innovative technologies should focus research and assistance to this sector.

Conservation Reserve Enhancement Program (CREP) as the First Choice for Building Buffers

As the WIP states, Pennsylvania leads the nation in CREP enrollment, bringing with it substantial water quality benefits. With a broad CREP partnership and continued robust resources available through CREP for future enrollment, PA has a terrific base upon which to achieve further implementation of additional riparian forested buffer acreage. Indeed, the WIP should stress the importance of CREP to PA's buffer goals for agriculture (as well as non-agricultural landowners) and propose new strategies to boost enrollment. Instead, the WIP recites statistics about the program with little attention to its future. The benefits of CREP and CREP buffers are many:

¹¹ Brubaker, Jack, Lancaster Sunday News, Unkind Cuts, October 31, 2010.

- CREP provides substantial non-state funding to implement riparian forested buffers to meet PA's milestone goals and financially benefit landowners.
- Riparian Forested Buffers, once successfully established after three to four years of careful management, require significantly less maintenance for proper BMP effectiveness compared to many other BMPs. Indeed, forested buffers continue to provide benefits for decades or longer. Many other agricultural BMPs have lifespans of only 5-15 years.
- Riparian Forested Buffers provide significant habitat value and local water quality and stream ecosystem services in addition to nutrient reductions to the Bay.
- Plentiful CREP resources can be used for many pasture-related agricultural BMPs, such as stabilized crossings and alternative livestock watering systems, thus freeing up limited cost share funding of other programs like EQIP, literally stretching financial assistance funding to serve more farmers and deliver more practices.
- CREP typically pays at least 100% of project installation costs, designed and implemented by experienced professionals. CREP typically yields profits of \$2000-\$4000 or more per acre over a 15-year contract, with an opportunity to re-enroll for an additional contract another \$2000-\$4000 or more per acre. In addition, CREP pays for post-planting care of buffers that is critical to their success.
- Forested riparian buffers provide greater opportunities for nutrient credit trading or carbon credit trading.
- Research from the Stroud Water Research Center has documented that forested streams may reduce 2-8 times more nitrogen than same-width grass buffers via in-stream processes.¹²
- Buffer maintenance is often more difficult for narrow than wider buffers. Streams with actively moving banks may undercut fence posts. Fences nearer to streams often catch more flood debris.

¹² Sweeney, B. W, T. L. Bott, J. Jackson, L. Kaplan, J. D. Newbold, L. Standley, W. C. Hession, and R. Horwitz, "Riparian deforestation, stream narrowing, and loss of stream ecosystem services," PNAS, September 2004; 101: 14132-14137.

Wherever Pennsylvania fails to get pollution reductions from a particular site forested buffers can provide (all paid for by CREP at a profit to landowner), there will need to be additional reductions from other practices for which funding is limited. The alternative methods/practices needed to reach the required reductions might present more challenges to farm management than adopting forested buffers.

Thus, the WIP should identify specific programmatic opportunities that DEP and partners can pursue to maximize CREP's contribution to Pennsylvania's nutrient reduction efforts. These may include:

- DEP should continue to give a clear preference to the establishment of 35-foot wide forested buffers over grass buffers.
- DEP should continue to offer its conditional cost-share reimbursement for the Riparian Forest Buffer Practice (CP-22) to ensure that enrollments continue to meet future milestones for buffers.
- DEP should convene the Pennsylvania CREP Partnership to discuss options for accelerating enrollment in CREP for buffers and commit to implementing the best options in the Phase II WIP.
- FSA and NRCS, with input from other partners, should consider modifications to EQIP and CBWI that incentivize the use of CREP instead of other Farm Bill funds for the construction of buffers and associated practices for livestock operations. For example, EQIP ranking criteria could give preference to proposed projects that include CREP buffers.

Much speculation has been made about farmers' unwillingness to enroll in a program that requires 35-foot minimum buffers. While buffer width is certainly a barrier for some producers, our experience suggests that many will adopt buffers and enroll in CREP when a clear vision of how forested buffers can play a valuable and profitable role in meeting pressing needs facing PA agriculture.

To illustrate, CBF's initial proposal to PENNVEST for ARRA funds included 120 farms asking for \$28 million for various agricultural BMPs. Eligibility for these funds required: 1) a Chapter 102 compliant conservation plan 2) elimination of runoff from ACA's or barnyards 3) elimination of milk house wastewater pollution and 4) 35' forested buffers on all areas of all streams (including existing buffers counted and use of CREP for new buffers). Out of 120 farms, only two declined

due to the buffer requirement. Our final proposal included 45 farms for \$14 million, and all agreed to the above terms including buffers of at least 35 feet.

Coordination among All Organizations and Agencies

The effort to assure that all farms in the Chesapeake Bay watershed are developing and implementing the necessary conservation and manure management plans will require collaboration among all parties working with farmers, not just conservation districts and DEP. The WIP should recommend roles and an on-going planning process bringing together DEP, USDA Natural Resources Conservation Service, Penn State Cooperative Extension, Pennsylvania Department of Agriculture, State Conservation Commission, PennAg Industries Association, Pennsylvania Farm Bureau, Pennsylvania Association for Sustainable Agriculture, Chesapeake Bay Foundation, PennFuture, private sector technical assistance providers, agribusinesses, and many other public agencies, agricultural and conservation organizations. A coordinated effort could advance innovative approaches that have not been employed in the past; for example:

- Conservation plans developed by NRCS to enable a farm's participation in cost-share programs should address all water quality problems on the farm and ensure that the farm will meet TMDL requirements.
- Agricultural lenders should be verifying that their clients are implementing the necessary plans, to reduce the financial risks of farms with serious pollution problems.
- Insurance providers could verify the implementation of plans, as a way to reduce their liability.
- When Penn State University's PaOneStop program to develop conservation plans is finalized, technologically-savvy youth could help farmers develop a conservation plan.
- The Food Alliance is now partnering with the PA Association for Sustainable Agriculture to deliver third-party certification of farms, food packers, and other agricultural entities that meet environmental and other standards.
- Milk inspectors could inform farms of their requirements, as a way to ensure that the farms remain in production and, in some cases, produce

higher quality milk, such as when cows are no longer standing in muddy animal concentration areas that contribute runoff to local streams.

- Municipal governments could ensure that farms are meeting all state and federal requirements, such as when farms need building permits. A better approach would be a comprehensive strategy to ensure that all farms are meeting requirements, such as that used by Warwick Towns in Lancaster County.
- Farms with the most significant pollution problems should be required to immediately develop plans, regardless of whether conservation districts or other public sector technical service providers are available. They could be linked with private sector conservation and nutrient management plans to develop plans quickly, at the farm's expense.
- County tax offices could verify that farms receiving preferential tax assessments under the Clean and Green program have and are following the required soil erosion control and manure management plans.

The Chesapeake Bay TMDL and state WIP will require public and private entities and thousands of Pennsylvania citizens, to make changes – some large and some small – in how they conduct their lives, properties, and businesses. DEP needs to lead and coordinate this effort so that everyone is pulling together.

Urban/Suburban Stormwater

In the draft WIP, DEP provides an excellent summary of existing stormwater-related programs, staffing, regulations, and permit structure. However, we have numerous concerns regarding the sufficiency of these and as well as the solutions for urban/suburban pollutant loads that are relied upon by DEP.

Projected reductions represent a reduced rate of increased load, not a true trend toward achieving cap loads.

DEP's proposed approach to addressing loads from the urban/suburban sector relies almost exclusively on efforts that minimize the increase in loads from land conversion activities. The approaches in the draft WIP offer little or no solution to addressing existing loads from previously developed urban/suburban land.

For example, consider a new residential development in a green field setting that must acquire a Chapter 102 permit. In this case, the reduction in pollutant loads via the new erosion and sedimentation control standards in Chapter 102 represent a decrease in the net increase in load during construction. As a result, no progress towards meeting the TMDL caps has been made but simply a reduction in the rate in which loads have increased, albeit temporarily in this case.

A similar argument can be made for the post-construction scenario. DEP's approach relies heavily on Pennsylvania's Stormwater Management Act 167. The Act 167 plans have traditionally focused on developing a plan that minimizes the impact of new sources of stormwater rate and, recently, volume on a watershed or county-basis. While in recent years such planning efforts have in some cases identified stormwater retrofit opportunities to address existing stormwater concerns, there is no requirement or reasonable assurance that such projects will be implemented. More discussion of the sufficiency of the current Act 167 program and requirements is provided below.

Finally, DEP contends that achieving the control guidance and guidelines for a 2-year 24 hour storm, as detailed in DEP's stormwater BMP Manual,¹³ results in a no net increase in pollutant loads. However, the control guidance only suggests a planning requirement of reducing post-construction loads by 85 percent reduction in post-development total suspended solids (TSS) and total phosphorus loads and a 50 percent reduction in post-development solute (as nitrate nitrogen). Furthermore, some studies have indicated that the 2-year 24 hour design storm may cause excessive erosive streambank flows to receiving streams. Under either scenario, this does not equate to a no net increase. These concerns are explained further under the Urban/Suburban Stormwater, Accounting for Growth section of our comments.

Methodology for Developing Current Loads: MS4 Runoff

We have and continue to contend that the MS4 Sector Methodology (page 34 of draft WIP) is fundamentally flawed by being non-reflective of real world conditions and contrary to the purpose and intent of the federal MS4 program.

¹³ Pennsylvania Department of Environmental Protection. 2006. Pennsylvania Stormwater Best Management Practices Manual. Document number: 363-0300-002.
<http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8305>

Essentially, using the approach described in the draft WIP would be equating publicly owned roads as equivalent of the MS4 drainage network. Under this methodology, the land area contributing to the MS4 would not be calculated part of the load. For instance, in a residential development in which the downspouts are connected to the stormwater system or drain to the system overland flow, DEP's methodology ignores the loads associated from these contributing areas and instead pretends that only the streets generate and contribute point source pollutant loads to the MS4 system. As the adage goes, possession is nine tenths of the law and it is simply scientifically unjustifiable to contend that those areas contributing to the MS4 should not be considered a part of the MS4, despite Pennsylvania's unique local governmental framework and inability to require retrofits or new stormwater BMPs on grandfathered private land.

The reasons why the proposed approach is scientifically questionable are clear; brief, however, this methodology threatens to significantly under-represent the pollution load from MS4 service areas. In turn, it will result in inappropriately depressed responsibilities for load reductions from MS4 sources areas.

Interestingly, by employing such a limited definition of the MS4 area, DEP has MS4 communities in a very difficult position to achieve assigned TMDL WLA loads. The approach would actually severely limit the suite of potential load reduction BMPs available to MS4s to those that are only applicable on or alongside roadways--street sweeping, catch basin inserts, and vegetated swales to name a few. If pollutant load reductions are not achieved or maintained with such BMPs, MS4 communities may be faced with being out of compliance with the TMDL WLAs and with limited options to address it.

In 2007, EPA issued a document that examines how TMDLs with storm water sources were created in 17 watersheds.¹⁴ None of the methodologies approved in these 17 examples appears to be in any way similar to Pennsylvania's methodology.

In our research, we have not found another instance where EPA has approved use of this type of an approach for the calculation of MS4 loads and associated

¹⁴ USEPA. *Total Maximum Daily Loads with Stormwater Sources: A Summary of 17 TMDLs*. July 2007. EPA 841-R-07-002. http://www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf.

load reductions as part of a TMDL; we believe that is because its use or approval would effectively undermine MS4 permitting programs across the country.

However, we understand and appreciate the unique difficulties Pennsylvania's fragmented local governmental system present in instituting an MS4 program, particularly a program which achieves quantifiable reductions in stormwater load. These issues are especially evident in the context of a TMDL.

Adopt the Christina River Basin Watershed Stormwater Source TMDL as the MS4 Load Methodology in the draft WIP

An interesting and appropriate solution to this problem may be the methodology employed in The Christina River Basin Watershed Stormwater Source TMDL (2006)¹⁵, which included all or parts of MS4 communities in Pennsylvania, Delaware, and Maryland.

The Christina TMDL acknowledges that for the actual waste load allocation (WLA) neither "the PA nor the DE MS4 permits identify the boundaries of the stormwater collection system contributing areas within each municipality. Therefore, it is not possible to assign a WLA specific to the storm sewer collection areas within each MS4 municipality. Because these systems have not yet been delineated, the TMDL includes nonpoint source loadings in the WLA portion of the TMDL. It is anticipated that the state's stormwater program will revise the WLA into the appropriate WLA and load allocation (LA) as part of the stormwater permit reissuance; however, the overall reductions in the TMDL will not change."

The Christina TMDL MS4 WLA methodology could be employed as the stormwater load calculation approach in the phase 1 WIP with the requirement that all new and reissued MS4 permits contain requirements for delineating the drainage areas of each outfall within the MS4 in order to more precisely determine the WLA versus LA loads within each urbanized area.

In summary, we strongly believe that DEP's proposed MS4 methodology is inconsistent with the MS4 permitting program and real world conditions. We recognize, however, Pennsylvania's unique local governmental structure and the difficulty it presents in dealing with this issue. To that end, we believe the approach employed in the Christina TMDL represents the most readily

¹⁵ USEPA. *Total Maximum Daily Loads with Stormwater Sources: A Summary of 17 TMDLs*. July 2007 EPA 841-R-07-002. http://www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf.

employable and justifiable solution and strongly urge DEP to undertake this alternative.

We have provided our position in a letter dated August 12, 2010 letter to EPA Region 3 Water Protection Division Director, Jon Capacasa. This letter can be found in Attachment B.

Methodology for Developing Current Loads: Industrial Stormwater

The narrative describing how industrial stormwater loads were derived should be expanded to include several key areas currently not discussed.

For instance, the area loads per land use in EPA's Chesapeake Bay Model appear not to contain an explicit industrial land use category. Given such, it is imperative that DEP present what the employed pollutant load (lbs/ac/yr) was for the industrial sector.

Secondly, DEP states that for consistency with other Pennsylvania TMDLs, a 100-acre drainage area per outfall was assumed. No information pertaining to how this assumption was derived in this or in previous TMDLs is presented in the draft WIP.

Methodology for Developing Current Loads: Construction Stormwater

The description of the method employed to calculate loads from construction activities is difficult to fully comprehend.

Under the approach, DEP assumes that the 10 year average rate of construction acreage will represent future activity, at least until 2025, it would appear not be reasonable to occur in perpetuity as eventually all developable land will be developed. To rectify this issue, it may be necessary for DEP to determine the remaining developable land per county and then subtract that value by the 10 year average acres to determine the remaining number of years the average rate of construction can continue within the county. Clearly, Pennsylvania's woeful record of land use planning makes such an analysis difficult.

Another issue is if construction activity increases above the 10 year average, this were to occur, it would represent a load not accounted for in the model and could result in exceeding the cap loads assigned to the sector and the overall TMDL. To avoid such a circumstance will require careful accounting by DEP and raises several difficult questions if such an event occurred. For instance, would

DEP cease approving construction permits if the 10 year average for the county would be exceeded by the approval? Or, would DEP require that all construction sites that represent acreage above the 10 year average have a "no net increase" of pollutant loads provision in their NPDES permits?

DEP states that for construction acres they employed the average loading rates associated with high intensity urban land. However, an open construction site, even with erosion and sedimentation controls, is fundamentally different than an urban site under post-development conditions. Simply stated, a construction site often has little or no vegetation or other soil stabilization; thus, rain events can easily mobilize soil particles of all sizes. A high intensity urban landscape is highly impervious and although that also causes water quality concerns, it typically does not represent excessive erosion of the developed land. A study by U.S. Geological Survey concluded that managed construction sites can contribute 16 times more sediment load on a per acre basis than developed urban land¹⁶.

The use of the high intensity urban land load called into question further given that the Bay Model includes a Pennsylvania land use category for construction. The barren/construction land use category indicates a nitrogen load (lbs/acre) of 27.7, a phosphorus load of 3.86, and a sediment load of 3.64 (t/acre). The high intensity urban pervious and impervious loads employed by the Bay Model are notably less than these values.

Finally, it is unclear whether DEP has considered under the construction source sector Oil and Gas extraction activities (i.e., pads and infrastructure) as part of the construction category. Given the magnitude of the industry and the amount that may be under construction for the foreseeable future, it would appear to be a vital oversight if such activities were not appropriately accounted for.

Methodology for Developing Current Loads: Urban/Suburban Runoff-Non MS4

DEP states that the non-MS4 load was determined by subtracting out regulated point source and other "developed" land loads from the total urban/suburban load. While the total non-MS4 load can be obtained from such an analysis, under this approach a more nuanced and comprehensive understanding of the urban/suburban load is not obtained.

¹⁶ David W. Owens, Peter Jopke, David W. Hall, Jeremy Balousek, and Aicardo Roa. 2000. Soil Erosion from Two Small Construction Sites, Dane County, Wisconsin. USGS Fact Sheet FS-109-00. U.S. Geological Survey, Middleton, WI.

A more accurate approach to determining the non-MS4 load would be to determine the urban/suburban load based on land use intensity (e.g., high or low) and the proportion of pervious and impervious fractions. Under this approach, developed land totals could be determined for each county and further segmented based on the level of intensity. Based on observational data or best professional judgment, the impervious to pervious fractions per land intensity would be calculated.

MS4 Program (sufficiency and compliance)

The current state of the MS4 program is widely acknowledged as being inefficient and largely ineffectual in achieving quantifiable reductions in stormwater-related pollution from urbanized areas. Difficulties with funding and oversight, Pennsylvania's governmental framework, and the limited nature of the Six Minimum Control Measures, amongst other factors, have restricted the program's overall effectiveness. Compliance issues that have resulted in nearly 100 municipalities recently being cited by EPA for failure to adhere to the permit requirements further illustrates the difficulties the program has encountered.

To that end, we find it perplexing that in the draft WIP DEP presents the MS4 permit as being highly effective and efficient and achieving quantifiable and sustainable reductions in stormwater pollutant load. While improvements in the permit may yield such, we do not believe that in its current or recently proposed form it can be a reliable approach to mitigating this source sector. This proposed change significantly reduces the reasonable assurance that the non-point source stormwater load will be reduced.

We recommend that DEP fully incorporate into Pennsylvania's MS4 permit those draining to the Bay watershed the recommendations we detail in our July 2010 letter to DEP Stormwater Planning and Management Chief, Barry Newn. A copy of that letter can be found in Attachment C.

Pennsylvania's Stormwater Management Act 167

When passed in 1978, Act 167 was a unique and progressive step towards better stormwater management. But, in many ways, the Act has outlasted its usefulness and needs to be updated to reflect today's regulatory realities. With updates that require preventing new sources of stormwater pollution and addressing problems from existing development, Act 167 could once again serve

as the framework for planning and implementing stormwater management relevant to the challenges of today.

In the draft WIP, Pennsylvania accurately notes the required nature of Act 167 planning and adoption of local ordinances. However, the reality of the program is such that it is considered a voluntary planning program not undertaken by counties or local governments without cost-share funding from DEP. As a result, the development and updating of such plans has been in some cases been extremely protracted. More importantly, information presented by DEP indicates that in some cases municipal adoption of Act 167 ordinances has been woefully inadequate.

DEP data indicates that of 2,566 municipalities in the Commonwealth, as of 2008 only 911 had at least one approved Act 167 plan. This equates to roughly only 36 percent of local governments. Of those, approximately 359 have failed to adhere to the Act and have past-due enactments¹⁷.

Act 167 could be used as the fundamental tool to achieve compliance with the stormwater-related requirements of the Chesapeake Bay TMDL, as well as local TMDLs. But in order for it to function in such a fashion, the Act should be revised so that requirements for such plans and ordinances explicitly and quantitatively integrate achieving and maintaining TMDL WLA and LA allocations for stormwater.

Funding assistance for Act 167 planning, which has been eliminated in recent Pennsylvania budgets, must be restored.

Accounting for Growth

Whether within or outside an MS4, new rural, suburban, and urban growth threatens to outstrip nutrient and sediment load reductions achieved from other sources. Given that new greenfield development rarely, if ever, occurs in isolation and often causes a “train” of development and services that follow, the

¹⁷ Newman, B. 2008. Planning to Protect Water Resources: Managing Stormwater Locally. Susquehanna River Basin Commission Workshop: Managing Stormwater Locally Workshop. October 29, 2008. Wildwood Conference Center, Harrisburg Area Community College, Harrisburg, PA.

cumulative impacts of these development patterns far outweigh the impacts per site basis.

In the draft WIP, DEP states that a no net increase in pollutant loads is achieved by managing for the 2-year 24 hour storm event. Under this option, it was conventional thinking that if flows were held below the two-year level that erosion would be minimized. However, some research has indicated that this criterion frequently does not protect channels from downstream erosion and actually exacerbate erosion since banks are exposed to a longer duration of erosive bankfull and sub-bankfull events.^{18,19,20,21} And, as development continues within a watershed that is managed under 2-year 24 hour storm event criteria, the bankfull event that causes streambed and bank erosion actually can decrease below the 2-year threshold.¹⁹ If such is the case, then a no net increase is not achieved due to erosive flows causing increased sediment and phosphorus loads downstream.

Furthermore, in section 3.5 of DEP's stormwater BMP Manual²² a control guideline for total water quality of an 85 percent reduction in post-development total suspended solids (TSS) and total phosphorus loads and a 50 percent reduction in post-development solute (as nitrate nitrogen) is recommended, not required. Under such a design approach, each new development which meets the control guidance and guidelines established in the Manual represents an allowable 15 percent increase in TSS and total phosphorus load and a 50 percent increase in nitrate nitrogen load. This does not equate to a no net

¹⁸ MacRae, C. 1993. An alternate design approach for the control of instream erosion potential in urbanizing watersheds. pp. 1086-1091. In proceedings of the Sixth International Conference on Urban Storm Drainage. Falls, Ontario. Marsalek and Torno (eds.)

¹⁹ MacRae, C. 1996. Experience from morphological research on Canadian streams: is control of the two-year frequency runoff event the best basis for stream channel protection? In *Effects of Watershed development Management on Aquatic Systems*. L. Roesner (ed.) Engineering Foundation Conference. Proceedings. Snow UT. August 4-9, 1996. pp. 144-160.

²⁰ McCuen R. and G. Moglen. 1988. Multicriterion stormwater management methods. *Journal of Water Resources Planning and Management*. (114) 4.

²¹ Brown, T and D. Caraco. 2001. Channel Protection. *Water Resources IMPACT*. American Water Resources Association, Volume 3, Number 6, pp 16-19.

²² Pennsylvania Department of Environmental Protection. 2006. Pennsylvania Stormwater Best Management Practices Manual. Document number: 363-0300-002.
<http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8305>

increase. In actuality, it represents a decrease in the increase of pollutant loads from new development.

To ameliorate this significant deficiency, we strongly recommend Pennsylvania's draft WIP include an offsets provision similar to that described in Chapter 3 of Maryland's draft WIP.²³ Under Maryland's proposed approach future loads from development would use different degrees of offsets in three different types of places. Areas with high loads per capita would need to offset loads to a higher degree than areas with low loads per capita. A third category would fall in between. Areas with sewer service and higher density of homes and jobs, served by state of the art sewage treatment, will tend to have lower per capita loads. Areas with low density development on well and septic systems would tend to have higher per capita loads.

Regardless of whether a modified version of Maryland's approach is acceptable, it is imperative that given the sprawling trend of land development in Pennsylvania over the last several decades, that a full cost accounting and offsetting of new stormwater loads be fully negated through a program which addresses post-construction stormwater management loads. Such a program should also abandon the "meadow or better" baseline condition to a more appropriate for the watershed baseline—forest.

Lawn Fertilizer –A lawn fertilizer restriction law should be enacted

The draft WIP only briefly mentions the potential consideration the development of an Urban Nutrient Management program. The precise nature of such a program is undefined.

Recent research has indicated that turf cover ranges from 2.1 to 3.8 million acres, or 5.3 percent to 9.5 percent of total Bay watershed area. Approximately 75 percent of current turf cover is potentially devoted to home lawns. In Pennsylvania, lawns cover an estimated 1,059,015 acres—most of which occurs in south-central part of the Commonwealth²⁴. Although precise data on

²³ Maryland Department of the Environment. 2010. Draft Maryland Watershed Implementation Plan for the Chesapeake Bay Watershed. http://www.mde.maryland.gov/programs/Water/TMDL/Pages/Programs/WaterPrograms/tmdl/cb_tmdl/tmdl_bay_wip_process.aspx

²⁴ Chesapeake Stormwater Network. 2010. CSN TECHNICAL BULLETIN No. 8 The Clipping Point: Turf Cover Estimates for the Chesapeake Bay. Baltimore, MD.

management techniques does not exist, the potential implications to local and Bay water quality is large and should be a primary focus.

Although numerous programs attempting to limit the impact of fertilizers on water quality have been developed and implemented across the United States in recent decades, given the size and magnitude of the Bay effort in Pennsylvania the most readily implementable approach could be to simply limit the sale of phosphorus-based lawn fertilizer in the Commonwealth.

A recent study released by Virginia Tech supports the concept of prohibiting fertilizer applications, with exemptions for nutrient deficient soils or new seedings, as one of the most effective approaches to address this issue within the Bay watershed. Researchers at Virginia Tech estimated that a potential 25 to 50 percent reduction in total phosphorus loading to stormwater could result within several years of the prohibition. The study also concluded that the prohibition achieved an estimated 10 to 20 percent reduction in total nitrogen loads to stormwater runoff.²⁵

Given the clear benefit such an approach would yield at relatively low cost, through legislation Pennsylvania should enact a lawn fertilizer restriction law which would ban the sale of all fertilizers designed for turf lands that contain phosphorus and those that contain less than 25 percent slow release nitrogen. Further, by law, prohibit the application of fertilizer that contains nitrogen to lands more than once a year unless required by a valid soil test. Applications of fertilizers should be allowed for new seedings on construction and reconstruction sites and for areas where soil test indicate a nutrient deficiency. A multi-year citizen education program will need to accompany the effort so as to ensure homeowner compliance.

Alternatively, the passage of a local municipal ordinance which effectively achieves the same outcome could be an explicit requirement of all reissued and new MS4 permits could be considered. However, this approach may prove unwieldy to manage and code enforcement officers within the municipalities many of which are already dealing with numerous issues, may not be willing to serve as an enforcement agency.

²⁵ Daniels, W.L., M. Goately, R. Maguire, D. Sample. 2010. Effects of Fertilizer Management Practices on Urban Runoff Water Quality. Virginia Polytechnic Institute and State University, Blacksburg, VA.

Establish a Series of Comprehensive Stormwater Pollution Planning and BMP Demonstrations

While moving forward with permits that meet the pollution reduction requirements of the Federal MS4 program and the Chesapeake Bay and local TMDLs, the draft WIP should propose a series of demonstrations to implement full scale on-ground installation of new and retrofitted stormwater practices designed to quantitatively achieve WLAs for stormwater pollutant loads within currently suburbanized/urbanized areas. The demonstrations should be sufficiently detailed so as to identify “critical sources areas” of stormwater load within the pertinent area and the most cost-effective solutions available to address these areas. Such an effort will provide valuable lessons learned as to how local implementation can occur and be integrated comprehensively into latter phases of the WIPs.

Develop a Stormwater Pollutant Offset Program for Existing Developed Areas.

In some areas, it may make sense to achieve load reductions through an offset program to be consistent with local targets and the cap allocation in the TMDL. A program that is designed at the appropriate spatial scale (e.g., county or watershed) that allows local governments to purchase pollution, but not volume or rate, offsets in lieu of on-the-ground practices should be considered. Such an effort, however, should not relinquish local entities from not achieving an appropriate baseline and threshold prior to being able to offset remaining loads.

Funding

Although DEP has risen NPDES permit fees recently and that will offer the program more funds towards technical review by staff, a significant deficiency in funds going towards implementation of stormwater-related planning and projects has and continues to exist.

A sustainable source of funding would not only facilitate Act 167 planning but also support local implementation of new and the retrofitting of existing stormwater practices and initiatives. Through legislation, regulation, or policy establish the framework for the creation and operation of local Authorities, Utilities, or Management Districts and/or other sustainable funding sources that enable entities to collect fees and generate revenues dedicated to planning, constructing,

monitoring, maintaining, improving, expanding, operating, inspecting and repairing public and private stormwater management infrastructure.

In addition, in order to facilitate the redevelopment and reduction of impervious surfaces in existing urban corridors, we recommend a law establishing a state incentive program for such activities. Incentives could include tax reductions/credits, density bonuses, parking waivers, fee reductions, and rapid project approval. Some local governments already provide a mix of incentives for certain actions. Incentives should only apply to projects that are either in US census-designated urbanized areas, consistent with the local comprehensive plans, include specific sound land use elements, such as supporting higher density, compact development, transit-oriented design, multiple uses, increased open space/buffers/tree canopy, and onsite capture and water reuse.

Forests

Methodology for Developing Current Loads: Forest

Section 4.7.3 of the draft TMDL and page 114 of the draft WIP presents a detailed description of the forested load within the watershed. In particular, the narrative describes the proportion of the forest load that can be attributed to atmospheric deposition, harvesting, and background conditions.

In the draft WIP, DEP contends that the Bay Model is “fundamentally flawed” because of the assumptions it uses in estimating pollutant loads from harvested acres. While DEP’s arguments regarding the fact that most harvested areas have some level of BMP implementation and that such sites are rarely completely denuded of vegetation, we believe an additional factor should be considered when estimating the potential pollutant load from harvested forest land—slope and slope length.

If harvesting of forest acres occurs on landscapes that are moderately to steeply sloped or in areas with conducive slope lengths, the pollutant load potential in such areas is higher than those in less sloped areas. In such instances, the presence of vegetative debris could easily be overwhelmed. As a result, it is important to understand the spatial specifics of the location of the harvesting activities, along with any BMPs that may be employed.

Accounting for Growth

In DEP's analysis of the current forest-land cover in the state and subsequent presentation of loss and gain information (page 117), it is interesting and important to note that while the overall forest cover acreage has remained relatively consistent since 1989, the loss of forest land and the pollutant removal efficiency they provide (overland flow interception and in-stream processing) has been largely concentrated in the central and south-central portions of PA's Bay watershed. These areas also have the highest pollutant delivery ratios and therefore represent a critical loss of pollutant removal capability. To that end, programs, initiatives, and regulations which protect and restore rural, suburban, and urban tree canopy cover should be prioritized to these areas.

Gap Analysis

As noted above, because forest losses since 1989 appear to have been concentrated in areas with the highest delivery ratios, emphasis should be on these locations. DEP states that 10 communities are partaking in an effort to analyze and possibly enhance urban tree canopy but those communities are not listed.

In addition, we believe DEP should consider requiring the adoption of a tree and woodland protection ordinance as part of an MS4 permit. Ordinances of this type provide a basic level of protection to existing tree canopies and remaining woodlands in urbanized areas. When used in conjunction with programs that enhance canopy cover, such as TreeVitalize, they can provide a quantifiable and stable source of pollutant reductions from the urbanized landscape. Numerous communities across the nation have adopted such ordinances and several models exist. A basic construct can be found at:

<http://conservationtools.org/tools/general/show/37> and
http://www.scenic.org/tree/model_ordinance

We commend DEP for their emphasis and exceedance of the 2010 forested riparian buffer goal of 3,300 miles. As one of the most cost-effective BMPs, forested buffers offer numerous ecological benefits and can be applied ubiquitously regardless of adjacent land use. Emphasis should continue on expanding the amount of forested buffers within the watershed via incentive and regulatory-based efforts, such as the new Chapter 102 requirements in HQ/EV watersheds.

Resource Extraction

Resource extraction activities provide a notable proportion of the total pollutant load from Pennsylvania, particularly in the Susquehanna River Basin. And according to the tables presented in page 23 through 28 or the B2 tables in Appendix 4, resource extraction is capped at 2009 levels.

Although the traditional mining common in the past is not expected to increase dramatically in the coming years, the oil and gas development industry related Marcellus Shale drilling represents a potentially significant new source of pollutant loads from extraction-based activities. We believe that this activity represents an unaccounted for new source that must be incorporated into the Bay Model and given cap loads for construction and post-construction stormwater loads, as other sectors have. To neglect this new source may render Pennsylvania unable to achieve TMDL cap loads, despite full implementation of BMPs, and therefore unfairly shifts the burden of reductions to accommodate the industry to other source sectors, like agriculture.

Similar to the construction permits for erosion and sedimentation control, the DE permit structure does not call for a no net increase in pollutant loads. As such, even well managed sites fully compliant with permit requirements can result in incremental increases in pollutant loads to local receiving waters and the Bay. Whether it's the BAT limits for sediment in coal mining-related permits or the narrative standards for oil and gas activities, each new permit represents a potential increase in pollutant load that must be accurately accounted for and offset.

Wastewater

CBF has and continues to fully support the implementation of the Point Source Allocation Strategy of 2007 which sets equitable nutrient limits via NPDES discharge permits for significant and non-significant sewage treatment facilities. Based on our analysis of the draft WIP, a few issues did emerge however. The aspects pertaining to the data presented in Table B2 and on page 23 through 28 are detailed in our Miscellaneous comments section. In addition to those,

Accounting for discharges less than 0.002 mgd may be necessary.

As noted by EPA in recent wastewater WIP meetings, although it is very unlikely that discharges less than 0.002 have or will have a notable impact on Pennsylvania's ability to achieve the TMDL load caps, establishing a system of documentation of these dischargers so provide an accurate tracking and accounting mechanism of these systems currently and overtime.

An accounting system would likely require the coordination of local Sewage Enforcement Officers and DEP staff so as to properly account for existing and newly built systems. The system should be established so that it can recognize when or if such systems may interfere with the Commonwealth's ability to achieve and/or maintain the cap loads established in the TMDL. In the event that this were to occur, a mechanism to incorporate nutrient limits and the no net increase sewage discharge policy will be necessary. Although unlikely, at least in the near term, developing the details regarding such a safeguard should be committed to in the Phase 1 WIP and finalized in a subsequent Phase.

Onsite Wastewater

Regardless of whether the septic system load represents roughly 4 or 30 percent of the nitrogen load delivered to the Bay from Pennsylvania, DEP's proposed approach for this sector is inappropriate.

Close Septic System No Net Increase Loop Hole

New or expanded discharges from sewage treatment plants must achieve a no net increase in pollutant loads according to DEP policy; yet, septic systems do not have to achieve this standard and are essentially given a free ride in terms of addressing the pollutant load from these systems.

For instance, a new residential development that can either hook up to an existing sewer line may be required to pay the local authority a fee to offset increase nutrient loads or provide offsets in the form of credits. Alternatively, the development could build a "package" plant to provide sewage treatment if conditions were appropriate. In this case, the no net increase provision applies and credits or appropriate treatment such as spray irrigation would need to be obtained or employed. However, if septic systems are to be employed as the sewage treatment technology the developer and those that live there have no

obligation to address nutrient loads from the systems. Such a situation may result in incentivizing septic systems over other treatment options.

To ameliorate this issue, DEP should close the loop hole available for septic systems and require new or reconstructed septic systems to also achieve a no net increase in nutrient loads. We concur, however, with DEP that reliable and affordable technology that addresses nitrogen loads from septic systems are available on the marketplace. Yet, other options to address future and existing loads from this source are available.

To address such loads, we propose the creation of a fixed price offset requirement for new or reconstructed septic systems. Under such a requirement the EPA load assumptions per system per household would be used to calculate the total anticipated load over the course of the expected lifespan of the system (e.g., 30 years) and a fixed price per pound of nutrient (e.g., \$5/lbs.) would be applied to determine the total cost of offsets required for the system. The cost of the offset would simply be added to the total cost of construction or reconstruction. Funds generated by the offsets would go into a newly established revolving fund that would assure that BMPs would be implemented to completely offset loads from the systems. Individual homeowners, developers or contractors would not have to seek out and acquire individual contracts for offsets under this system. They would simply pay a onetime fee into an established fund.

Miscellaneous Suggestions

Throughout the document, summarizations of and citations for reports, articles and data are not presented as there are no footnotes or bibliography as part of the draft WIP.

For instance, in the conclusion of the Executive Summary DEP cites the results from the Susquehanna River Basin Commission's (SRBC) monitoring stations for the period of 1985-2008. No citation to the dataset(s) or to any of SRBC's reports is given. In many other occasions reports are cited or discussed in the text but not included in a bibliography. For instance, on page 10 several reports are noted (Smith et al. 1992; Kemp et al. 2000; Dennison et al. 1993; Kemp et al. and Gallegos 2001). On page 115 a report by "Edwards and Willard" is discussed but no information pertaining to it, such as year or title is given. Similarly, or

page 129 there is a reference for a 2008 Walter and Merritts paper but again there is no footnote or bibliography detailing common information such as the title of the paper or publisher.

In each of these cases, the lack of appropriate referencing of the cited documents makes it difficult to obtain and review the information cited by DEP. The final WIP should correct this issue throughout the document. PA may be required to defend its WIP in court and a complete administrative record is imperative

DEP does not present a map or other information regarding of the four major basins/watersheds discussed in the draft WIP.

The draft WIP relies heavily on presenting the loads and subsequent Load Allocations (LA) and Wasteload Allocations (WLA) for the Susquehanna and Potomac River Basins along with the Eastern and Western Shore Watersheds. Yet, there is no presentation of geographical boundaries of these watersheds. There is also no discussion regarding the size of each watershed (e.g., square miles) or the general land use (past, present, and predicted future)--all of which are vitally important in the examination of the assigned WLAs and LAs. It also is important for citizens and the regulated community to comprehend precisely in which basin/watershed they lay for regulatory and programmatic considerations.

DEP should address the oversight by including such information in the final WIP.

DEP should present the area loads per land use along with the best management practice (BMP) efficiencies in an additional Appendix.

Although this information is available from the EPA Chesapeake Bay Program, it can be difficult and time-consuming to locate. Reviewers of the draft WIP who do not have the time seek this information but do have an interest in it, would benefit from its presentation in the draft WIP.

The Susquehanna River trend data presents an incomplete summary of SRBC's monitoring study results and should be expanded upon to reflect a holistic analysis of the data.

SRBC's report²⁶ presents the most recent summary of the water quality monitoring trends within key locations of the Basin. Although the data indicate improvement, particularly in total nitrogen load reductions, context is important.

²⁶ Susquehanna River Basin Commission. *Nutrients and Suspended Sediment Transported in the Susquehanna River Basin, 2008, and Trends, January 1985 Through December 2008*. Pub. 267. Harrisburg, PA, 2009.

When one is orders of magnitude above a sustainable load (i.e., loads needed to achieve the TMDL), a decrease from the long term mean load doesn't really validate significant progress.

Several parameters (particularly several phosphorus species) have rather large errors/uncertainty reported for the 2008 value. In many cases, if one considers that the true value is within the range then there is little or no statistical reduction and, in some cases, possibly an increase in load. Even with the error/uncertainty around a 2008 value, several phosphorus species, particularly the dissolved and dissolved orthophosphorus, are notably higher than in previous years. Total phosphorus is within the mean or slightly higher in 3 of 6 sites; thus indicating no real trend. Exceptions are the Conestoga and Marietta sites.

Nitrogen and associated species appear to have decreased in 2008 versus the long-term mean, while flow remained at or very near the average for most sites. Errors/uncertainty around nitrogen species are not very large and when considered do indicate a true reduction in most cases.

Sediment fate and transport is complex, a year's worth or several years' worth of reductions may not necessarily reflect a decrease at the edge-of-stream. Reporting on the fine and sand sediment fractions of sediment, along with total suspended sediment, would yield additional insight into the sediment issue.

In short, the data does appear to indicate that, generally, 2008 nitrogen load is a decrease from the long-term mean. However, the analysis does not put this decrease into the perspective that given the significant amount of work required to reach TMDL cap loads, this represents a small fraction of the overall needed reductions. Furthermore, even if the reported reductions hold, the rate of reduction is still relatively slow and would not be expected to achieve a TMDL in a timely manner. Additionally, the phosphorus data is concerning and could have a dramatic affect on local water quality as well as the Bay. Why the reversal to an upward trend in phosphorus (continuation of the "banana" plots)²⁷, particularly the dissolved and ortho fractions, is speculative but important.

²⁷ Langland, M.J., D. Moyer, and J. Blomquist. 2007. *Changes in Streamflow, Concentrations, and Loads in Selected Nonpoint Source Basins in the Chesapeake Bay Watershed, 1985-2006*. Open File Report 2007-1372. U.S. Department of the Interior: U.S. Geological Survey, Reston, Virginia.

The "Pennsylvania 2009 Nutrient and Sediment Loads..." are notably different than those presented in EPA's draft TMDL.

On page 13 of the draft WIP, the sector loads from the phase 5.3 watershed model are presented as numerical values. However, when converted to percentage of total load, these percentages are vastly different than those in Table 4.1 and 4.2 of the draft TMDL (page 4-6), except for agriculture. For instance, in the on page 13 of the draft WIP urban/developed load is stated to deliver 6,704,000 lbs of TN/yr. This represents 6 percent of the total load of 106,413,000 lbs of TN/yr. In table 4.1 of the TMDL, "stormwater" is credited for 33 percent of the total load. Septic systems are documented with delivering 3,290,000 lbs/yr in the draft WIP, which is approximately 4 percent of the total load. The draft TMDL assigns septic systems a current load of 30% of the nitrogen. Similar discrepancies can be found for the other source sectors.

The "Projected Sector Loads..." and tables in Appendix 4, are fundamentally different and therefore cannot be appropriately examined.

The "Projected Sector Loads" tables presented in page 23 through 28 of the draft WIP attempts to summarize pollutant load data for each basin/watershed along with percent of total, reductions, total allocation, LAs and WLAs. In numerous instances, these numbers are vastly different than those in Appendix 4.

For example, the Susquehanna CAFO nitrogen data on page 23 indicates that no information regarding 2009 loads is available but that a WLA of 870,000 is set. The nitrogen B2 table indicates that the 2009 CAFO load is 1,222,439 lbs/yr. In the same table, the MS4 load is presented as 805,923 lbs/yr with a 2025 cap load of 542,475 lbs/yr. In the table on page 23, the 2009 MS4 load is presented as the B2 2025 cap load of roughly 542,000 lbs/yr. This table also presents this as the final WLA; therefore indicating no load reductions called for from MS4. Similar discrepancies are present for each basin/watershed in each of the pollutant tables in Appendix 4.

Interestingly, no WLA reductions are called for from the construction, mining, and industrial stormwater sectors under the data presented in pages 23 through 28. According to the tables in Appendix 4, this is not the case. If this is accurate, however, it represents a disturbing lack of responsibility by these sectors and a disproportionate shouldering of the reduction burden to others, such as agriculture. It also apparently establishes an equability issue in that it that DEP

appears to be proposing that construction activities which cumulatively do not cause an exceedance of the WLA will have a lesser set of erosion and sedimentation control requirements than those that would. Presumably, any permitted construction activity which would result in the construction WLA to be exceeded would need either be denied a permit or required to achieve a no net increase offset. Whereas, construction loads that would not cause the WLA to be exceeded would have no such requirements.

Curiously, the total nitrogen point source data for the Potomac Basin indicates that an additional 335,000 lbs/yr of nitrogen compared to the 2009 load is allocated. The B2 data for this sector does not appear to support the increase presented in the table on page 23; yet, if it is correct, it appears to violate the "net increase" requirement for new or expanded loads from sewage treatment facilities.

The Point Source total sediment load data for the Eastern Shore watershed in "Pennsylvania 2009 Nutrient and Sediment Loads..." tables indicates a disproportional sediment load.

On page 28 of the draft WIP, the 2009 and WLA Eastern Shore Watershed point source sediment load is presented as 52,300 million lbs/yr. Comparatively, the Susquehanna Basin is cited as having a point source sediment load of 16.1 million lbs/yr; 0.36 million lbs/yr for the Potomac, and 0.0 million lbs/yr for the Western Shore. The TSS data presented for point sources of all types in Table B2 does not support this information.

The Point Source total sediment load data in Table B2 indicates a notable sediment load from this sector, contrary to previous information and the underpinnings of the Point Source Allocation Strategy developed under the Tributary Strategy.

Divergent from the data presented in page 23 through 28, TSS data in Table B2 indicates a notable load of sediment from point sources. For instance, in the Susquehanna Basin the 2009 significant municipal wastewater load is presented as 19,344,917 lbs/yr. This presumes the subtotal title is incorrect in reference to nitrogen and that the table title is correct. Although this is substantially less than the load attributed to agriculture and urban/suburban stormwater, it nonetheless represents a load that was not considered under the Point Source Allocation Strategy. Notably, Table B2 does not call for any reductions below the 2009

while other sectors must reduce loads substantially. For instance, agriculture is tasked with reducing sediment by 166,600,699 lbs/yr by 2025. This disproportionally shifts the burden of achieving TSS reductions to the other sectors.

Given the magnitude of the point source sediment load and the lack of consideration of such loads in the permitting process previously developed, it appears necessary to re-examine the Point Source Allocation Strategy to include TSS limits and reductions in existing and future NPDES permits.

Conclusion

The TMDL is real. The ramifications of failure are real.

We appreciate DEP's candor and acknowledgement that improvements to their first draft of the WIP are necessary. We encourage EPA and DEP to continue to develop mechanisms and funding to strengthen the WIP, with special emphasis on achieving reasonable assurance. Achieving non-point source compliance and quantifiable stormwater improvements for our communities, supporting our County Conservation Districts, and providing funding for nonpoint source improvements are key elements of the WIP

Pennsylvania must ensure that all stakeholders work together to ensure that the necessary components of funding, staffing, technical assistance, enforcement, and regulations—are sufficient enough to achieve our pollution reduction goals.

We believe that the recommendations we have made would meet and exceed the thresholds for reasonable assurance established by EPA and encourage DEP to undertake serious consideration of them.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew J. Ehrhart", with a long horizontal line extending to the right.

Matthew J. Ehrhart, Pennsylvania Executive Director

ATTACHMENT A



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

17 August 2010

Pennsylvania Watershed Implementation Team Members

Dear Watershed Implementation Plan Team Member:

I want to personally thank each of you for the time, effort, and resources you and your organizations have committed to the Watershed Implementation Plan (WIP) process. The Chesapeake Bay Foundation (CBF) also acknowledges and thanks the Department of Environmental Protection (DEP) for developing and implementing a thorough and open stakeholder process for constructing the WIPs.

In order to construct a WIP that not only contains proposed BMPs to meet the modeled reduction requirements, but includes the implementation capacity to assure that those BMPs are put "on the ground", we have prepared a look at the 2008-2009 implementation progress to compare with the current milestone commitments. This is instructive in seeing where we have the resources or capability to succeed, and where we must place increased emphasis.

Methodology

As you know, Two years ago the federal and state governments determined that shorter-term milestones would improve accountability, accelerate pollution reductions, and increase the likelihood of meeting pollution reduction targets for the Chesapeake Bay and its Tidal Tributaries. The jurisdictions announced their first milestones in May 2009 and laid out plans to meet these commitments over the three years between January 1, 2009 and December 31, 2011. A copy of Pennsylvania's first milestone commitment is provided as Enclosure A for your convenience.

For comparison, we have obtained from EPA Pennsylvania's reported BMP implementation levels from the 2008 and 2009 bay model runs (v. 4.3). This information and the milestone commitment levels for the pertinent BMPs are presented as Enclosure B. Additionally, we calculated the percentage of the three year milestone which has been achieved in the first year. While not every BMP would be on a linear trajectory, this does give some indication of whether we are progressing at a rate that will result in PA meeting our 2011 milestone commitments.

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As you evaluate and comment on the draft Phase I WIP, we ask that you consider enclosed information and comments that we believe are critical creating a Plan that meet the requirements of the TMDL and avoid Pennsylvania being faced with a "Backstop WIP" from EPA or other consequences from the EPA letter.

Results

While assessing the practices and implementation numbers in Enclosure B, several things are apparent. The first is that we are doing very well in some areas and lag substantially in others. The second interesting observation is that the areas where is doing well can be grouped into three categories:

1. Practices that have broad acceptance and are part of accepted, profitable practice, such as poultry phytase, cover crops and no-till farming.
2. Practices that are supported by robust federal programs, such as animal waste systems and forest buffers.
3. Practices that are required by regulatory programs with oversight capacity such as wastewater treatment plant upgrades.

A third notable observation is that is that, due to inadequate tracking of BMPs instead with private resources, PA is dramatically under-reporting some BMPs, such as cover crops and no-till acres. Numerous other BMPs are also likely under-represented to lesser extent.

The fourth item, and the one of great concern with respect to crafting the WIP, is that the area's where we are dramatically behind on BMP implementation are those where we have acknowledged inadequacies in programs or funding. Nutrient management plans and Conservation Plan targets in the milestone are far behind schedule. These plans set up the implementation demand for many other BMPs in future years. The gap in this area is largely the result of a lack of compliance, outreach and technical assistance. Our state budgets have not addressed the funding and staffing needs of the County Conservation Districts, who are the front line for doing this work. Another gap is the lack of progress on addressing stormwater runoff from our urban/suburban centers. This has been discussed the Stormwater WIP team, PA continues to struggle with developing a clear strategy and has yet to commit the necessary resources to implement improvements in this area.

Wastewater Treatment

Pennsylvania's strategy²⁸ with regard to permitting for wastewater treatment facilities appears to be on track. For all phase 1 facilities, cap loads based on concentrations of 0.5 mg/l TN and 0.8 mg/l TP at design annual average daily flow have been placed in permits and will become effective on 10/01/2010. Permits for phase 2 facilities will be effective

²⁸ Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting. PADEP. A 2007. http://www.portal.state.pa.us/portal/server.pt/community/chesapeake_bay_program/10513

10/01/2011; and phase 3 facilities on 10/01/2012. Permit limits will be achieved through capital upgrades, nutrient trading, or combinations of both.

We continue to support DEP's wastewater treatment strategy as the most cost-effective and equitable approach towards achieving this sectors cap load allocation; however, we remain concerned that financing through grants and loans remains limited, particularly in comparison to Maryland and Virginia. Given the current economic conditions, prioritizing existing statewide water infrastructure funding towards project with the Bay watershed that facilitate achieving this sectors cap load should be explicitly integrated into the decision-making criteria of PENNVEST and other state financing sources.

Agriculture

Pennsylvania's progress on the Ag milestones has been a mixed bag. As noted earlier we are on or ahead of implementation schedule for a number of key BMPs, including buffers, cover crops, and no-till. We also know that we are substantially underreporting some BMPs, including cover crops and no-till. According to recent estimates from evaluations in Bradford and Lancaster counties, we are under-reporting by as much as 40 to 80 percent.

The problematic issue for the agricultural sector is the degree to which we are behind in developing nutrient management plans and conservation plans. This reality is consistent with the compliance problem facing PA's agricultural sector, as an estimated 50-60% of farms do not have the required conservation plan, consistent with PA Chapter 102, and manure management plan. These plans serve as the conservation and compliance road maps for farms and drive the future implementation of many BMPs.

The grave concern about PA's performance in these areas is threefold:

1. It translates to a continued problem with compliance, leaving water quality unaddressed, and farms subject to enforcement.
2. It may lead to greater difficulties in meeting the implementation goals for other BMPs in future years.
3. Our ability to meet these targets is predicated on the availability of technical assistance.

The technical assistance necessary to develop conservation plans and nutrient management & manure management plans has primarily come from the UDPA NRCS and our County Conservation Districts. State funding for conservation districts has been steadily declining, not increasing as will be necessary to reverse the current trend. NRCS staffing has also been declining, while their project funding has increased – creating a growing bottleneck. Further, preparation of these plans by private sector agricultural consultants has been hampered by the substantial reduction of the Resource Enhancement And Protection (REAP) tax credit, the lack a robust, streamlined Technical Service Provider (TSP) scenario with USDA, and the lack of compliance outreach and enforcement.

The Phase I WIP must address the issues of compliance, an increase in technical assistance availability, and resource availability. CBF recommends that the WIP T and the Commonwealth consider incorporating the following concepts in the WIP:

- **Develop an Agricultural Compliance Plan which identifies the process, resources and timelines necessary to achieve compliance with state and federal requirements.** Enclosure C is a copy of CBF's comments on PA D draft Ag. Water Quality Initiative.
- **Increase funding for the Resource Enhancement And Protection (REAL credit to \$20 million per year.** This efficient and over subscribed tax credit program has established a tremendous track record of matching tax credits private resources to achieve conservation goals.
- **The Commonwealth should work with the USDA NRCS to develop a broader, more flexible TSP to enable greater private sector delivery of critical conservation programs such as EQIP and CBWI.** PA's private sector agricultural groups should be enabled to play a greater role in providing the critical technical assistance necessary to implement the federal agriculture program dollars.
- **Increase the state funding to County Conservation Districts.** The WIP should estimate the additional staffing and resources for the conservation districts to implement the additional outreach, compliance and technical assistance necessary for implementation of the Agricultural portion of the B&E TMDL and provide the necessary increase in future budgets beginning in the 2011-2012 budget.
- **Improve Phosphorus Management.** The current Phosphorus Index allows phosphorus to accumulate in some soils, and therefore does not adequately protect water quality. Nutrient management planning requirements should be revised to prevent over-saturation of soil phosphorus, such as by incorporating Saturation into the P Index, without losing the protection that the P Index provides to steep slopes and areas near streams.
- **Develop a system for tracking all BMPs.** As noted above, we do not effectively track nor, therefore, report and model most BMPs that are private funded and not part of an organized program. CBF agrees with many other partners that we are dramatically under-reporting numerous key BMP's and accurately tracking those BMPs is critical.

Stormwater

Pennsylvania's decentralized and fragmented local governmental system presents particular conundrum in addressing pollutant loads from urban and suburban runoff evidenced by the extensive discussions within the stormwater WIP workgroup,

achieving and maintaining the necessary reductions from this sector under our current framework is unlikely, if not impossible, and certainly very costly.

In order to circumvent such challenges, we believe that the following recommendations should be undertaken by DEP and, where appropriate, the legislature:

- **Employ a scientifically justifiable and accurate methodology to determine the MS4 pollutant load.** Pennsylvania's currently-proposed methodology equates the publicly owned roads with the MS4 drainage network. Under this methodology, the land area contributing to the MS4 would not be calculated as part of the load. This approach is inadequate and scientifically unjustifiable and, if implemented, could result in other sectors shouldering the burden for a large percentage of the urban stormwater load. And, as noted in EPA's July 9, 2010 letter to DEP, the methodology is inconsistent with the Clean Water Act and MS4 permitting program. However, we understand and appreciate the unique difficulties Pennsylvania's fragmented local governmental system present in instituting an MS4 program, particularly a program which achieves quantifiable reductions in stormwater load. These issues are especially evident in the context of a TMDL. We recommend that DEP consider employing the methodology used in The Christina River Basin Watershed Stormwater Source TMDL (2006)²⁹, which included all or parts of MS4 communities in Pennsylvania, Delaware, and Maryland. The Christina TMDL MS4 WLA methodology could be employed as the stormwater load calculation approach in the Phase I WIP with the requirement that all new and reissued MS4 permits contain requirements for delineating the drainage areas of each outfall within the MS4 in order to more precisely determine the WLA versus LA loads within each urbanized area.
- **Revise Act 167 requirements to explicitly and quantitatively integrate achieving and maintaining TMDL WLA and LA allocations for stormwater.** When passed in 1978, Act 167 was a unique and progressive step towards better stormwater management. But, in many ways, the Act has outlasted its usefulness and needs to be updated to reflect today's regulatory realities. With updates that require preventing new sources of stormwater pollution and addressing problems from existing development, Act 167 could once again serve as the framework for planning and implementing stormwater management relevant to the challenges of today. As a result, Act 167 could be used as the fundamental tool to achieve compliance with the stormwater-related requirements of the Chesapeake Bay TMDL, as well as local TMDLs.
- **Prioritize passage of House Bill 1390, commonly referred to as the Integrated Water Resources Act.** HB 1390 would set a framework for a more consistent, coordinated, and comprehensive county-based approach to stormwater management in the Commonwealth.

²⁹ This document can be found at: http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm

- **Establish a sustainable source of funding to support local implementation of new and the retrofitting of existing stormwater practices and initiatives.** Through legislation, regulation, or policy establish the framework for the creation and operation of local Authorities, Utilities, or Management Districts and/or create sustainable funding sources that enable entities to collect fees and generate revenues dedicated to planning, constructing, monitoring, maintaining, improving, expanding, operating, inspecting and repairing public and private stormwater management infrastructure.
- **Establish through regulation or policy a pollution offset program for all new or increased permitted discharges.** President Obama's Executive Order on the Chesapeake Bay Foundation's settlement agreement with EPA commits the federal government to require that states must offset all new nitrogen, phosphorus and sediment by reducing them from another source, including new or increased permitted discharges. This requirement includes new or increased permitted discharges from construction and post-construction stormwater. It should be noted that this is not an endorsement of the concept of offsetting volume from new development which is entirely different.
- **Through legislation, consider a statewide lawn fertilizer restriction.** By banning the sale of all fertilizers designed for turf lands that contain phosphorus or those that contain less than 25 percent slow release nitrogen. Further, by law prohibit the application of fertilizer that contains nitrogen to turf lands more than once a year unless required by a valid soil test. Citizen education programs will be needed to ensure homeowner compliance with the once-a-year nitrogen application rate. Alternatively, the passage of a local municipal ordinance that effectively achieves the same outcome could be an explicit requirement of a reissued and new MS4 permits could be considered.
- **Create by law a state incentive program for the redevelopment and reduction of impervious surfaces in existing urban corridors.** Incentives could include tax reductions/credits, density bonuses, parking waivers, fee reductions, and rapid project approval. Some local governments already provide a mix of incentives for certain actions. Incentives should only apply to projects that are either in US census-designated urbanized areas, consistent with the local comprehensive plans, and include specific sound land use elements, such as supporting higher density, compact development, transit-oriented design, mixed uses, increased open space/buffers/tree canopy, and onsite capture and reuse.
- **Close the "no net increase" sewage treatment loophole for new septic systems.** Unlike new or expanded sources of sewage discharges, under current Pennsylvania policy septic systems are not required to acquire offsets for nutrient loads. Through regulation or policy, all new or rehabilitated septic systems should be required to either install nutrient-reduction technology or purchase offsets equivalent for the expected life of the system.

- **Establish of a series of urban stormwater pollution reduction demonstrations.** While moving forward with permits that meet the pollution reduction requirements of the Federal MS4 program and the Chesapeake Bay and local TMDLs, prioritize and implement a series of demonstrations to implement on-ground installation of new and retrofitted stormwater practices designed to quantitatively reduce stormwater pollutant loads within currently suburbanized/urbanized areas. The demonstrations should be sufficiently detailed so as to identify “critical sources areas” of stormwater load within the pertinent area and the most cost-effective solutions available to address these areas. Such an effort will provide valuable lessons learned as to how local implementation can occur and be integrated comprehensively into latter phases of the WIPs.
- **Develop a stormwater pollutant offset program for existing developed areas.** In some areas, it may make sense to achieve load reductions through an offset program to be consistent with local targets and the cap allocation in the TMDL. A program that is designed at the appropriate spatial scale (e.g., county) that allows local governments to purchase pollution offsets in lieu of on-the-ground practices should be considered. Such an effort, however, should not relinquish local entities from not achieving an appropriate baseline and threshold prior to being able to offset remaining loads.

Conclusions

CBF strongly supports the milestone approach to restoring the Chesapeake Bay. The use of short-term targets should, in theory, provide for greater accountability and accelerate pollution reductions and more responsive adaptive management. While Pennsylvania has made significant, accelerated progress on some specific BMPs, the Commonwealth has demonstrated an inability to deliver on core programmatic items that are critical to achieving the milestone and the longer term goals of TMDL implementation. The new WIP must contain programmatic and resource commitments necessary meet all the milestone commitments and to accelerate nutrient pollution reductions.

The WIP is Pennsylvania’s final opportunity to create a strategy for implementing the TMDL that is built by PA, for PA, and utilizes the details and efficiencies that are specific to the Commonwealth. Integration of the necessary resources and implementation strategies to achieve the reduction goals is critical to the success of the WIP and its acceptability to EPA. CBF urges you to consider the recommendations contained in this letter and to develop similar recommendations for consideration by the WIP Teams and the Commonwealth. If we do not construct a strategy that that is credible for accomplishing the necessary reductions, the Federal Government will use the authorities and digression at its disposal to attempt to accomplish those reductions in Pennsylvania. The outcomes of that approach will be for more difficult and less efficient for the stakeholders and the Commonwealth.

I urge you to consider the recommendations enclosed, the ramifications of inaction, insufficient action, and the opportunities that we have to create a strategy that creates clean water for the Chesapeake watershed and the rivers and streams of Pennsylvania.

If you have any questions regarding our information or recommendations, please contact me at (717) 234 5550. Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew J. Ehrhart", with a long horizontal line extending to the right.

Matthew J. Ehrhart
Pennsylvania Executive Director

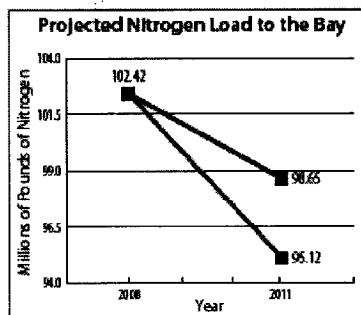
Enclosure A: Pennsylvania's First Milestone Commitment
Enclosure B: Pennsylvania BMP Implementation Levels
Enclosure C: CBF's Comments on PA DEP's Draft Agricultural Water Quality Initiative

Cc: John Hanger, Secretary, PA Department of Environmental Protection
Russell C. Redding, Secretary, PA Department of Agriculture

Enclosure A: Pennsylvania's First Milestone Commitment



Nitrogen Reduction Milestone

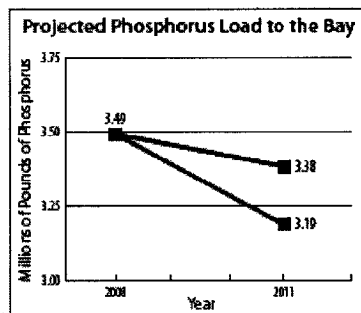


Pennsylvania's 2011 milestone commitment is to reduce nitrogen by 7.3 million pounds over the three year period (2009-2011).

Reduction at Previous Rate of Progress	3.78M
Pollution Load after Previous Rate of Progress	98.65M
Reduction at Milestone Rate of Progress	7.30M
Pollution Load after Milestone Rate of Progress	95.12M
Increase in Rate of Progress	93%

M = Millions of Pounds of Nitrogen

Phosphorus Reduction Milestone

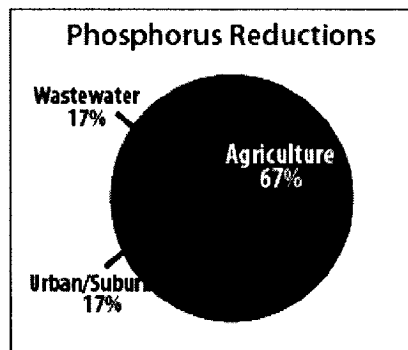
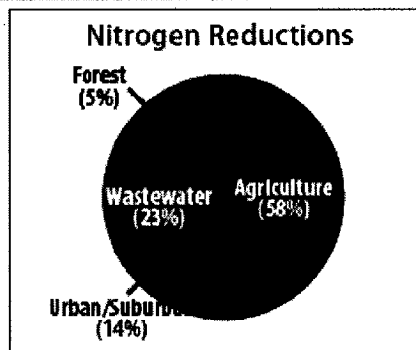


Pennsylvania's 2011 milestone commitment is to reduce phosphorus by 300,000 pounds over the three year period (2009-2011).

Reduction at Previous Rate of Progress	116,000 lbs.
Pollution Load after Previous Rate of Progress	3.38M
Reduction at Milestone Rate of Progress	300,000 lbs.
Pollution Load after Milestone Rate of Progress	3.19M
Increase in Rate of Progress	159%

M = Millions of Pounds of Phosphorus

Pollution Reductions by Source



* Nitrogen and phosphorus reductions are based on Phase 4.3 Watershed Model data for agricultural, urban/suburban and air reductions and monitored data for wastewater reductions.

For more, contact: Kenn Pattison, (717) 772-5652, kpattison@state.pa.us



Funding During Milestone Period

Pennsylvania Department of Environmental Protection (DEP)	
Nutrient Management Delegation Agreements	\$1,749,000
Conservation District Fund Allocation Program	\$2,065,320
Chesapeake Bay Implementation Grant State Match Plus	\$3,410,000
PA Stormwater Planning and Management (Act 167)	\$2,200,000
Growing Greener Watershed Protection Grant Program	\$13,512,087
Pennsylvania State Conservation Commission (SCC)	
Dirt and Gravel Road Maintenance Program	\$2,441,000
Nutrient Management Program	\$2,301,000
Conservation District Fund Allocation Program	\$1,091,600
NRCS Engineering Assistance for BMP Installation	\$64,000
Commercial Manure Hauler and Broker Certification Program	\$89,400
Resource Enhancement and Protection Program (REAP)	\$8,450,000
Pennsylvania Infrastructure Investment Authority (PENNVEST)	
Loans and grants for wastewater projects	\$30,078,120
TOTAL	\$67,451,527

Pollution Reduction Actions by End of 2011

Abandoned Mine Reclamation	2,219 acres	Nutrient Management	473,801 acres
Animal Waste Management Systems	275 units	Off-Stream Watering with Fencing	6,143 acres
Carbon Sequestration/Alternative Crops	25,740 acres	Off-Stream Watering w/ Fencing & Rotational Grazing	21,249 acres
Conservation Plans/SCWQA	327,599 acres	Off-Stream Watering without Fencing	7,335 acres
Continuous No-Till	86,567 acres	Other Conservation Tillage	88,924 acres
Cover Crops (late planting)	174,818 acres	Poultry Litter Transport Out of Watershed	55,659 tons
Dirt and Gravel Road Erosion and Sediment Control	124,913 feet	Poultry Litter Transport Into Watershed	3,256 fewer tons
Enhanced Nutrient Management	450 acres	Poultry Phytase	19,626 pounds P
Erosion and Sediment Control	181 acres	Septic Connections	7,353
Forest Buffers (all land uses)	19,059 acres	Tree Planting	15,065 acres
Forest Harvesting Practices	125 acres	SWM Practices	8,690 acres
Grass Buffers	1,161 acres	Urban Stream Restoration	4,400 feet
Land Retirement	58,876 acres	Wetlands	1,548 acres
Mortality Composters	22 units	Heavy Truck Anti-Idling Rule	9.78M fewer hours
Non-Urban Stream Restoration	215,088 feet		

Additional Reduction Options

Erosion and Sediment Control Regulations

- Codification of post-construction stormwater requirements
- Mandatory riparian forest buffers for exceptional value waters
- Conservation Plan revision to include animal heavy use areas

Stormwater Management Planning Act expansion to provide for Integrated Water Resource Planning

Legacy Sediment BMP Development and Implementation

Phosphate Dishwasher Detergent Ban

For more, contact: Kenn Pattison, (717) 772-5652, kpattison@state.pa.us

Off-Stream Watering w/ Fencing	(acres)	20,279	21,015	736	6,143	5,407
Off-Stream Watering w/o Fencing	(acres)	7,445	7,656	211	7,335	7,124
Stream Watering w/ Fencing & Rotational Grazing	(acres)	41,429	46,952	5,523	21,249	15,726
Precision or Intensive Rotational Grazing	(acres)	0	29	29		
Total Pasture Grazing BMPs (All Types)	(acres)	69,153	75,652	6,499		
Forest Buffers*	(acres)	29,673	34,405	4,733		
Wetland Restoration*	(acres)	2,837	2,973	136		
Land Retirement	(acres)	134,976	147,329	12,353	58,876	46,523
Grass Buffers*	(acres)	2,788	3,911	1,123		
Tree Planting	(acres)	7,663	7,581	-82		
Carbon Sequestration/Alternative Crops	(acres)	25,740	27,599	1,859	25,740	23,881
Conservation Plans/SCWQP	(acres)	1,413,048	1,483,247	70,199	327,599	257,400
Animal Waste Management Systems (All Types)	(manure acre) = 145 Animal Units	4,086	4,293	206	275	69
Water Control Structures	(acres)	0	0	0		
Horse Pasture Management	(acres)	0	1	1		
Non-Urban Stream Restoration (Agriculture)	(feet)	76,323	94,511	18,188		
Gravel Road Erosion & Sediment Control	(feet)	0	828,094	828,094		
Poultry Phytase	Reduction of Cropland Applications (lbs TP)	3,227,331	3,233,873	6,542	19,626	13,084
Precision Feeding and/or Forage Management	Reduction of Applications (lbs TN)	0	0	0		
Precision Feeding and/or Forage Management	Reduction of Applications (lbs TP)	0	0	0		
Swine Phytase	Reduction of Cropland Applications (lbs TP)	0	0	0		
Manure Transport	(net tons transported)	43,633	51,121	7,488	55,659	48,171
Ammonia Emissions Reductions	Reduction of Atmospheric Deposition (lbs TN)	0	0	0		
Urban/Suburban Lands BMPs						
Wet Ponds & Wetlands	(acres)	75,631	76,026	395		
Detention Ponds & Hydrodynamic Structures	(acres)	451,214	453,539	2,325		
Dry Extended Detention Ponds	(acres)	92,647	92,564	-83		
Urban Infiltration Practices	(acres)	84,999	85,453	454		
Urban Filtering Practices	(acres)	0	0	0		
Recent/Retrofit Stormwater Management	(acres)	0	0	0		
Total Stormwater Management (All Types)	(acres)	704,491	707,582	3,091	8,690	5,599
Forest Conservation	(acres)	0	0	0		
Impervious Surface & Urban Growth Reduction	(acres)	0	0	0		
Forest Buffers (Urban)*	(acres)	2	0	-2		
Tree Planting (Urban)*	(acres)	0	0	0		
Grass Buffers (Urban)*	(acres)	7	0	-7		
Stream Restoration (Urban)	(feet)	2,200	2,200	0	4,400	4,400
Erosion & Sediment Control*	(acres)	8,184	8,118	-66	181	247
Nutrient Management (Urban)	(acres)	0	0	0		
Street Sweeping	(acres)	0	0	0		
Street Sweeping	(tons sediment)	0	0	0		
Forest Buffers (Mixed Open)*	(acres)	6,291	8,693	2,403		
Wetland Restoration (Mixed Open)*	(acres)	862	862	0		
Tree Planting (Mixed Open)*	(acres)	34,765	36,311	1,546		
Nutrient Management (Mixed Open)	(acres)	0	0	0		
Abandoned Mine Reclamation	(acres)	10,769	12,063	1,294		
Non-Urban Stream Restoration (Mixed Open)*	(feet)	67,069	73,779	6,710		
Gravel Road Erosion & Sediment Control (Mixed Open)*	(feet)	356,654	828,094	471,440		
Abandoned Mineland Reclamation	(acres)	10,769	12,063	1,294	2,219	925
Urban/Suburban Lands BMPs: Septic						
Septic Connections	(systems)	41,644	44,074	2,430	7,353	4,923
Septic Denitrification	(systems)	0	0	0		
Septic Pumping	(systems)	0	0	0		
Resource BMPs						
Forest Harvesting Practices	(acres)	125	228	103	125	22
Non-Urban Stream Restoration (Forest)*	(feet)	0	0	0		
Gravel Road Erosion & Sediment Control (Forest)**	(feet)	2,637,709	1,656,188	-981,521	124,913	1,106,434
Cummulative BMPs						
Forest buffers (all uses)	(acres)	35,965	43,098	7,133	19,059	11,926
Gravel Road Erosion & Sediment Control (all uses)	(feet)	2,994,363	3,312,375	318,012	124,913	0
Non-urban Stream Restoration (all uses)	(feet)	143,392	168,289	24,897	215,088	190,191
Tree Planting (all uses)	(acres)	42,428	43,892	1,464	15,065	0
Wetland Restoration (all uses)	(acres)	3,699	3,835	136	1,548	1,412
Grass buffers (all uses)	(acres)	2,795	3,911	1,116	1,161	45
BMPs Not Reported to EPA Model						
Mortality Composters	(systems)				22	
Heavy Truck Anti-Idling Rule	(fewer hrs)				9,780,000	
Poultry Litter Transport Into Watershed	(tons)				55,659	
Poultry Litter Transport Out of Watershed	(fewer tons)				3,256	

BMPs are applicable in two or more land uses.
 * tally for all uses for which the BMP is employed in the Cumulative BMPs. The Cumulative BMPs value is in comparison to the 2011 Milestone value.

values for these BMPs reflect lower reported

Enclosure C: CBF's Comments on PA DEP's Draft Agricultural Water Quality Initiative



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

June 8, 2010

Chesapeake Bay Foundation's Comments for Pennsylvania's Proposed Chesapeake Bay Agricultural Water Quality Initiative

The Chesapeake Bay Foundation agrees with the goals of "Pennsylvania's Proposed Chesapeake Agricultural Water Quality Initiative." We applaud the objectives of nutrient and sediment reduction on all farms within the Chesapeake Bay watershed, while maintaining the economic viability of farms and meeting federal and state laws and Chesapeake Bay legal requirements.

We consider it appropriate that the initiative focus in part on education and outreach to meet existing regulatory requirements for Erosion and Sediment Control and Manure Management, along with technical assistance to meet these requirements, especially for farms that have been outside of the realm of the Nutrient Management and Concentrated Animal Feeding Operation (CAFO) program. We also believe that compliance assurance coupled with targeted enforcement actions are needed for operations that are not taking the necessary steps to comply with these requirements, and that the enforcement actions will serve as an incentive to encourage other farms to comply with these regulations to reduce nutrient and sediment pollution to Pennsylvania's waters.

The Chesapeake Bay Foundation recommends the following changes to strengthen the initiative:

1. Targeted Watersheds

The targeted watershed approach must be complemented with a broad and robust compliance outreach effort throughout the Chesapeake Bay watershed. The focus on small watersheds is very limiting, especially since Pennsylvania has approximately 5,500 miles of streams impaired by agricultural pollution alone. Focusing on a small number of watersheds at any given time will limit DEP's ability to restore all impaired streams and the Chesapeake Bay in a timely fashion. The effort within the prioritized watersheds should not eclipse the effort throughout the watershed.

Also, there are DEP, Conservation District, and other relevant staff located throughout the Chesapeake Bay watershed, including those in small watersheds not in the initial prioritization. Efforts for outreach, education and enforcement are essential. A targeted watershed focus without complimentary outreach to farms throughout the watershed could allow these staff, as well as the farmers in those areas, to be complacent and not take the necessary steps to improve water quality.

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2. Total Maximum Daily Load Compliance

All Manure Management Plans and Erosion and Sediment Control Plans, and their associated conservation practices, should be developed so that they will be adequate given expectations for agriculture's portion of local and Chesapeake Bay Total Maximum Daily Loads (TMDLs). Individual plans satisfying only state and federal regulatory requirements could be insufficient to reduce nutrient and sediment pollution to meet the TMDL. This would require further outreach and effort to refine plans and encourage adoption of additional conservation measures, adding to the work load of agency staff. It would also impose significant hardship for farmers who could be required to develop multiple plans in succession.

The Manure Management Plans and Erosion and Sediment Control Plans should address all measures needed to meet both water quality goals and regulatory requirements. For example, a farm with contour strips and manure application setbacks from streams may satisfy regulatory requirements, but the addition or substitution of no-till cultivation, cover crops and riparian buffers may be needed to address water quality goals. The plans should include these practices so that farms are not faced with the further challenges at a later date to establish additional practices.

3. Concentrated Animal Feeding Operations

The proposed plan includes working with EPA Region 3 to improve the CAFO program. The Chesapeake Bay Foundation strongly recommends that the program designate livestock operations with discharges as CAFOs, as specified in the federal CAFO rule. The farms should have an opportunity (within 60 days) to correct the discharges before designation. The goal should be to remove the discharges, rather than expand the number of farms under the CAFO program.

Farms' efforts to prevent CAFO designation would be a valuable tool to address problems such as: livestock directly depositing manure in streams, stormwater flowing from manure management facilities, and other sources of stream degradation. CAFO designation would provide a regulatory tool to address some of the most significant sources of pollution to the Commonwealth's waters.

In Pennsylvania, requiring farms to eliminate discharges or face regulation as CAFOs is likely to be a more effective tool to improve water quality than lowering the threshold of animal numbers to include more farms as CAFOs.

4. Enforcement

The proposed initiative lacks necessary details on the "tiered compliance process." For example, it does not specify the timeframe provided to farms to comply with requirements. It provides for enforcement discretion that is not detailed. "Escalated enforcement" is not defined. There are no timelines for ensuring that all farms will have the necessary plans developed and implemented.

The initiative should focus enforcement on the most problematic farms first. Complaint-driven enforcement of environmental regulations is inadequate because it drives regulatory action to the farms where there are observant neighbors, not necessarily where the greatest pollution risks exist. Throughout the watershed, there are farms that have not participated in voluntary technical and financial assistance, and some of these operations contribute to serious water quality problems. Publicized enforcement on these farms would serve as an incentive to many others to quickly develop the plans and establish the conservation practices needed on their farms to avoid similar regulatory action.

5. Details needed

Most importantly, the proposed Chesapeake Bay Agricultural Water Quality Initiative is lacking some of the most important details to assess the potential effectiveness. Achieving the Initiative goals will require a substantial revision of existing Conservation District and DEP staff job descriptions and/or expectations to prioritize a significant increase in outreach and compliance. The plan should specifically address how this technical assistance and enforcement will occur. The draft begs many questions:

- What is the timeline? How many farms will have plans developed each year? When will the plans be implemented?
- How and when will farms be notified of the requirements?
- What type of outreach and educational activities will be conducted?
- Who will conduct these outreach and educational activities?
- What will be the specific roles and responsibilities of Conservation District and DEP staff?
- How will other partners, such as the USDA Natural Resources Conservation Service, Penn Cooperative Extension, Pennsylvania Department of Agriculture, PennAg Industries Assoc, Pennsylvania Farm Bureau, Chesapeake Bay Foundation, private sector technical assistance providers, and other public agencies, agricultural and conservation organizations collaborate?

Recommended strategy for reaching compliance throughout Chesapeake Watershed

The outreach, education and enforcement requirements to meet the Chesapeake Bay Agricultural Water Quality Initiative are immense, but they are achievable goals with a concerted effort. The Chesapeake Bay Foundation provides the following estimates as a framework to ensure that every farm across the Chesapeake Bay watershed develops and implements the necessary plans.

According to the Census of Agriculture, Pennsylvania's portion of the Chesapeake Bay watershed includes approximately 40,000 farms needing Erosion and Sediment Control Plans, and about 10,000 livestock operations needing Manure Management Plans. About 2,000 already have Nutrient Management Plans, so the remaining 38,000 require Manure Management Plans. The Lower Susquehanna Watershed should see the most emphasis initially, because this area contributes the greatest nutrient and sediment loads to the Chesapeake Bay and has greater staff resources. Lower Susquehanna Watershed contains about 21,000 farms, approximately 10,000 of which have livestock.

Some farms will require only verification that they have current Erosion and Sediment Control Plans and Manure Management Plans that are being implemented on schedule. Some farms will require only modest updates to their plans to address water quality concerns. A third of farms will require far more assistance in developing and implementing plans where none currently exist. Anecdotal information suggests that about approximately one third of farms are in each of the three above groups. We estimate that an average of two days of technical assistance staff time per farm are needed to develop a basic Erosion and Sediment Control plan with a Manure Management Plan in the case of livestock operations.

CBF's assessment of technical resources estimates that reaching about 5,000 farms each year is possible, so that developing the necessary plans for all farms in the Chesapeake Bay watershed is an achievable goal within eight years. These estimates include:

- 49 Chesapeake Bay Technicians in Conservation Districts, that could spend about 2/3 of their time (140 days/year) on outreach and plan development, with an average of two days per farm. They could develop 3430 plans annually.

- About 40 Nutrient Management Technicians, Erosion and Sediment Control Technicians and other Conservation District staff, that could spend 10% of their time, or about 21 days/year to develop 420 plans per year.
- USDA Natural Resources Conservation Service assistance with approximately 500 plans per year through various programs, such as the Environmental Quality Incentives Program and the Conservation Stewardship Program.
- Eight Department of Environmental Protection regional staff encouraging the most problematic farms to develop the necessary plans immediately, through the private sector if Conservation District staff unavailable. They could reach about 50 farms per year per person, or about 400 total plans per year.
- The private sector's development of an additional 250 plans in the initial year, and more in the future. These people must play a significant role in plan development and implementation, and their ranks would likely expand with demand, as farms see stronger regulatory requirements or nutrient credit trading opportunities.
 - Farms in geographic proximity could be grouped together (possibly with Conservation District assistance) to obtain lower cost bids for planning.
 - Additional funding from EPA could support private sector plan development.
 - Farms that pollute Pennsylvania's waters should develop the necessary plans immediately, and many will need to rely on private sector planners, or face enforcement actions.

According to these estimates of combined technical resources of the public and private sector, about 5,000 farms in the Chesapeake Bay Watershed would have plans each year. Initial efforts should be targeted to livestock operations currently lacking plans. All livestock operations in the Lower Susquehanna watershed should have plans by the third year, and by the fifth year in the rest of the watershed. By the eighth year, all Chesapeake Bay Watershed farms should have an Erosion and Sediment Control plan with a Manure Management Plan when needed, although some may need adjustments.

Timeframe for plan development:

	Lower Susquehanna Watershed		Remaining Chesapeake Watershed		Total
	Livestock farms	Crop farms	Livestock farms	Crop farms	
2010	4,000		1,000		5,000
2011	4,000		1,000		5,000
2012	2,000	1,000	2,000		5,000
2013		2,000	3,000		5,000
2014		2,000	1,000	2,000	5,000
2015		3,000		2,000	5,000
2016		3,000		2,000	5,000
2017				5,000	5,000
total	10,000	11,000	8,000	11,000	40,000

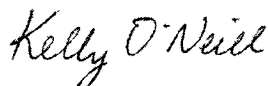
Once plans are developed, we recommend the following timeframe for implementation and establishment of the necessary conservation practices.

- Manure application rates, setbacks, management of temporary storage areas, and winter application criteria will be applied according to Manure Management Plan immediately after plan development.

- Livestock management near streams should be addressed within three months of plan development (when required in plan). People should be encouraged to participate in the Conservation Reserve Enhancement Program (CREP) when possible. Public funds should be used when buffers of at least 35 feet are included. Flexible fencing without public funds is an option for a quick remedy when needed.
- Structural changes such as animal concentration areas or manure storages must be completed within three years of plan development.
- Cover crops, no-till cultivation, and other in-field practices should be established during the crop year when possible, but at a maximum, within two years when crop rotations and equipment purchases cause delays.

The Chesapeake Bay Foundation recognizes that this strategy is ambitious, but can be achieved with concerted effort. It will require significant outreach and technical assistance, combined with the enforcement of cases where there are verified pollution problems. These enforcement cases will encourage many people to seek the necessary assistance, rather than relying solely on time-consuming court cases. Since requirements for Erosion and Sediment Control Plans and Manure Management Plans have been required for over 30 years, although now undergoing major revisions, farms that are able to receive assistance from public agencies should not be exempt from the requirements, and should be expected to seek help from the private sector.

Sincerely,



Kelly M. O'Neill
Agriculture Policy Analyst

ATTACHMENT B



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

12 August 2010

Jon M. Capacasa, Director
Water Protection Division
USEPA Region 3
1650 Arch Street (3PM52)
Philadelphia, PA 19103-2029

Dear Mr. Capacasa:

As you know, CBF is one of the members of the Chesapeake Water Implementation Plan (WIP) Urban-Suburban-Rural Workgroup in Pennsylvania such, we have been participating in the discussions regarding the development WIP for the State. The purpose of this letter is to thank EPA for its detailed letter Pennsylvania DEP dated 9 July 2010 regarding DEP's proposed MS4 methodology part Pennsylvania's stormwater WIP.

However, we remain concerned given that EPA did not explicitly prohibit DEP employing the proposed methodology or indicate what, if any, ramifications may of this or a similarly inaccurate methodology were employed. The letter also d appear to fully indicate the details of what an acceptable methodology is; for ins the two MS4 methodology options set forward by EPA to the Bay states.

It should be noted that we continue formally express our opposition to using the recent methodology proposed by DEP to determine the boundaries of the MS4 s areas in assessing the current load from MS4s. In its most recent correspon regarding this methodology³⁰, Pennsylvania states:

For Pennsylvania, there are no GIS/spatial data that delineate the actual boundaries of the MS4 service areas. In discussions with Barry Newman, DEP Chief of Stormwater Planning and Management, it was decided to define the MS4 service areas based on the area of roadway within each MS4 municipality that lies within the urbanized area boundary. Urbanized

³⁰ This is the second methodology presented by Pennsylvania. The first proposal was that the MS4 service area would be calculated as 1% of the urban land within each of the relevant MS4 urban area boundaries, as defined by EPA. Once the MS4 service area is defined, EPA will estimate the load based on area-weighted averages to all loads from all land uses within the service area are part of the aggregated waste target load. The service area as described here refers to the 1% of the urban land within the relevant MS4 urban area boundary. Methodology to Develop Current Loads for Stormwater Sectors, Handout #1, May 27th Workgroup Meeting, May 25, 2010 – Requested by PADEP.

area extent will be derived from the US Census 2000 (2009 corrected version) Urbanized Areas data. PennDOT and the Pennsylvania Turnpike Commission maintain MS4 permits for their roadways within the Urbanized Area portions of the State. The area of their respective roadways lying within the MS4 urbanized areas will define the boundaries of these MS4 service areas.³¹

Essentially, by using this approach Pennsylvania would be equating the publicly owned roads with the MS4 drainage network. Under this methodology, the land area contributing to the MS4 would not be calculated as part of the load. This approach is inadequate and we believe scientifically unjustifiable.

The reasons why the proposed approach is scientifically questionable are numerous and we will not detail them herein. In brief, however, this methodology threatens to significantly under-represent the pollution load from MS4 service areas. In turn, it will result in inappropriately depressed responsibilities for load reductions from MS4 sources areas. Additionally, by employing such a limited definition of the MS4 area, DEP would be confining the suite of potential load reduction BMPs available to MS4s to those that are only applicable on or alongside roadways.

EPA has issued a document that examines how TMDLs with storm water sources were created.³² It is important to note that EPA has included a disclaimer in this document clarifying that it is not intended to serve as a substitute for the CWA regulations and does not impose legally binding requirements on EPA or states. Having said that, none of the methodologies approved in these 17 examples appears to be similar to Pennsylvania's methodology.

In our research, we have not found another instance where EPA has approved the use of this type of an approach for the calculation of MS4 loads and associated load reductions as part of a TMDL; its use or approval in this case would effectively undermine MS4 permitting programs across the country. Our analysis indicated that in general the methodologies used in past efforts have been similar to the two EPA has repeatedly proposed to Pennsylvania as follows:

- *Provide a map of the MS4 service areas including facilities like DOT roads and highways, state and federal institutions with the Chesapeake Bay drainage. EPA will use area-weighted averages to assume all loads from all land uses within the service area are part of the waste target load.*

³¹ Pennsylvania Sector Methodologies for Developing Current Loads, June 15, 2010, Attachment #3. PADEP.

³² Total Maximum Daily Loads with Stormwater Sources: A Summary of 17 TMDLs. http://www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf.

- *EPA will use area-weight averages to estimate current loads from urban land uses within MS4 jurisdictions, using jurisdiction boundaries originally submitted by the states in September 2008.*³³

We find these two approaches reasonable and scientifically reliable. However, we understand and appreciate the unique difficulties Pennsylvania's fragmented governmental system present in instituting an MS4 program, particularly a program which achieves quantifiable reductions in stormwater load. These issues are especially evident in the context of a TMDL.

In 2006, an interesting and appropriate solution may be the methodology employed in The Christina River Basin Watershed Stormwater Source TMDL (2006)³⁴, which included all or parts of MS4 communities in Pennsylvania, Delaware, and Maryland.

The Christina TMDL acknowledges that for the actual wasteload allocation (WLA), neither "the PA nor the DE MS4 permits identify the boundaries of the stormwater collection system contributing areas within each municipality. Therefore, it is not possible to assign a WLA specific to the storm sewer collection areas within each municipality. Because these systems have not yet been delineated, the TMDL includes nonpoint source loadings in the WLA portion of the TMDL. It is anticipated that the state's stormwater program will revise the WLA into the appropriate WLA and allocation (LA) as part of the stormwater permit reissuance; however, the required reductions in the TMDL will not change."

The Christina TMDL MS4 WLA methodology could be employed as the stormwater calculation approach in the phase 1 WIP with the requirement that all new and renewed MS4 permits contain requirements for delineating the drainage areas of each MS4 within the MS4 in order to more precisely determine the WLA versus LA loads for each urbanized area.

Finally, as you know, our settlement agreement³⁵ with EPA says that the Agency will "expand the universe of MS4s" through new rulemaking. Specifically, the agreement states:

Pg. 7 - WHEREAS, on April 21, 2010, EPA issued for public notice and comment a draft NPDES permit for the Municipal Separate Storm Sewer System (MS4) of the District of Columbia:

Pg. 16 – III.C.9.c. By July 31, 2010, EPA will issue an "MS4 Stormwater Permitting Approach for the Chesapeake Bay Watershed" that will identify

³³ Methodology to Develop Current Loads for Stormwater Sectors, Handout #1, May 25, 2010 – Revised by P. May 27th Workgroup Meeting.

³⁴ This document can be found at: http://www.epa.gov/owow/tmdl/17_TMDLs_Stormwater_Sources.pdf.

³⁵ Settlement Agreement, *Fowler v. EPA*, No. 09-005 (D.D.C. May 11, 2010).

key regulatory and water quality' performance expectations EP A will consider when reviewing new or reissued draft state MS4 permits.

Pg. – III.D.12 - 12. By September 30, 2011, EPA will propose a regulation under section 402(P) of the Clean Water Act to expand the universe of regulated stormwater discharges and to control, at a minimum, stormwater discharges from newly developed and redeveloped sites. As part of that rulemaking, EPA will also propose revisions to its stormwater regulations under the Clean Water Act to more effectively achieve the objectives the Chesapeake Bay TMDL. In developing the proposed rule, EPA will consider the following elements related to stormwater discharges both nationally and in the Bay watershed: (1) additional requirements to address stormwater from newly developed and redeveloped sites; (2) requiring development and implementation of retrofit plans by MS4s to reduce loads from existing stormwater discharges; and (3) expanding the definition of regulated MS4s. EPA will take final action on the regulation by November 19, 2012.

It would seem entirely inconsistent with this objective, set out in the settlement of our lawsuit against the Agency, for PA to be taking an action that would substantially shrink the universe of MS4 coverage, geographically, as it pertains to PA's stormwater WIP.

We are very aware and supportive of the time, money and effort being put forth by the EPA, the states and the other stakeholders in this endeavor. We also appreciate that EPA has reiterated several times that it has high expectations for the states to provide accurate information in its WIPs.

At this stage, it is crucial to ensure that all resources are being used efficiently and in a scientifically justifiable manner to ensure a WIP and TMDL that will produce the results are all seeking. CBF therefore strongly advocates using of one the EPA-recommended methodologies be employed to determine current load from MS4s in Pennsylvania.

In conclusion, we ask that EPA clearly state to DEP in formal format that not only is the proposed methodology scientifically indefensible, adversely precedent-setting, and in contravention to regulation and law, but that will it not be acceptable in Pennsylvania's WIP. Furthermore, such a statement by EPA should make clear that if DEP employs the proposed or a similarly unacceptable methodology, EPA will reserve the right to impose consequences that include, but are is not limited to, those detailed in EPA's 29 December 2009 letter to the Bay states (i.e., the "consequences letter").

As always, we sincerely appreciate your effort and attention to this matter and look forward to your response.

Sincerely,

Harry Campbell, Pennsylvania Senior Scientist

cc: Evelyn MacKnight, USEPA-WPD; Region 3
James Curtin, USEPA-OGC
Jon Mueller, CBF
Lee Epstein, CBF

ATTACHMENT C



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

July 6, 2009

Via email

Barry Newman
 Department of Environmental Protection
 Bureau of Watershed Management
 Rachel Carson State Office Building, 10th Floor
 P.O. Box 8775
 Harrisburg PA 17105-8775
ep-pag13comments@state.pa.us

RE: Proposed General NPDES Permit for MS4s (PAG-13)

Dear Mr. Newman:

On behalf of the Chesapeake Bay Foundation (CBF), we respectfully submit the following comments on the Department's proposed general NPDES permit for small (Phase II) municipal separate storm sewer systems (MS4s) (PAG-13).

CBF is the largest nonprofit organization dedicated to the protection and restoration of the Chesapeake Bay, its tributaries, and its resources. With the support of over 20 members, our staff of scientists, attorneys, educators, and policy experts work to ensure that policy, regulation, and legislation are protective of the quality of the Chesapeake Bay and its watershed.

Stormwater runoff is one of the largest sources of pollution to Pennsylvania rivers and streams, including those rivers and streams that drain to the Chesapeake Bay. Approximately 4,000 miles of streams in Pennsylvania are polluted by stormwater from our developed and developing areas. Improperly managed stormwater pollution of our streams with nutrients, sediment, and other pollutants, accelerates stream bank erosion and property loss, and contributes to severe flooding.

The federal Clean Water Act requires municipalities covered under the municipal separate storm sewer system (MS4) permit program to obtain an MS4 National Pollution Elimination System (NPDES) permit. This permit requires MS4 municipalities to reduce the discharge of pollutants from their stormwater systems to the "maximum extent practicable" by adopting six Minimum Control Measures, or MCMs.

MS4 municipalities in areas with impaired waters are faced with additional requirements. The federal Clean Water Act and Pennsylvania law require those municipalities to include measures necessary to ensure compliance with water quality standards.

Pennsylvania's portion of the Chesapeake Bay watershed does not include any Phase I municipalities. All municipalities that are regulated under the MS4 program are Phase II municipalities. According to EPA Chesapeake Bay Program (2007), urban and suburban stormwater runoff from Pennsylvania contributes approximately 13.7 million pounds of nitrogen, 505,000 pounds of phosphorus, and 210 million pounds of sediment to the Chesapeake Bay annually. To meet Pennsylvania's requirements to restore the Bay, loads from these sources must be reduced as follows: by 2.8 million pounds of nitrogen, 321,000 pounds of phosphorus, and 5.4 million pounds of sediment. With the Chesapeake Bay watershed in crisis, if Pennsylvania is to meet its Bay obligations with respect to reductions from stormwater sources, a robust MS4 general permit is a critical tool.

There are aspects to the current draft of PAG-13 that are improvements over the initial permit issued in 2002, and we commend DEP for making those improvements. However, in many respects, we do not believe the draft presently open for public comment is sufficient to address pollution from stormwater as required under state and federal law. The major shortcomings of the permit are:

- **The permit does not contain sufficient specificity to ensure that municipalities will reduce pollution from stormwater to the maximum extent practicable.**
- **The permit does not require municipalities to mandate the use of low impact development (LID) practices for all new development and redevelopment.**
- **While it is an improvement from the 2002 model ordinance, the draft model ordinance is not strong enough to ensure that municipalities are employing LID standards and reducing pollution to the maximum extent practicable.**
- **The permit discourages municipalities from adopting ordinances that are stronger than DEP's model ordinance.**
- **The permit does not include sufficient measures to ensure that municipalities discharging stormwater into impaired waters (including those with approved TMDLs) are reducing pollution sufficient to meet water quality standards.**
- **The permit fails to require MS4s to develop TMDL Implementation Plans which adequately incorporate EPA's nine elements for such plans.**

- **The permit lacks any provisions requiring compliance with Chesapeake Bay load allocations, which are “functionally equivalent” to TMDL wasteload allocations.**
- **The permit does not include sufficient opportunities for the public to comment on, and participate in, the development of a municipality’s stormwater management and TMDL implementation plans.**

Our detailed comments on each of these issues are set forth beginning on page for For each issue where it is appropriate, we include recommendations for improving draft permit.

1. The permit does not contain sufficiently specific measures to ensure that municipalities will reduce pollution from stormwater to the maximum extent practicable.

Section 402(p)(3)(B)(iii) of the Clean Water Act sets forth the standard of pollution control that MS4 NPDES permits must achieve. It states:

Permits for discharges from municipal storm sewers . . . shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. 33 U.S.C. § 1342(p)(3)(B)(iii).

Congress clearly intended that MS4 permits shall not be issued unless the permits "require controls to reduce the discharge of pollutants to the maximum extent practicable [MEP]." *Env'tl. Def. Ctr., Inc. v. EPA*, 344 F.3d 832, 854-56 (9th Cir. 2003) (quoting *id.*). Thus, the permit must not only preach about achieving MEP, but the permit itself must require the best controls to enable municipalities to meet the MEP technology-based standard. *Id.*; 33 U.S.C. § 1342(p)(3)(B)(iii).

Federal regulations further mandate that MS4s shall, "at a minimum," develop a stormwater management program "designed to reduce the discharge of pollutants to [MEP], to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act." 40 C.F.R. § 122.34(a). MS4s are required to implement six Minimum Control Measures (MCMs) in order to protect water quality and reduce the discharge of pollutants to the maximum extent practicable. *Id.* § 122.34(a), (b). Moreover, 40 C.F.R. § 122.34(d)(1)(i) requires that the MS4 identify and submit best management practices (BMPs) for each of the six MCMs. 40 C.F.R. § 122.34(d)(1)(i). These BMPs must be robust enough to fully achieve the six MCMs and ensure that the MEP standard is in fact met. *Id.*

It is DEP's obligation as the permitting authority to provide the blueprint and the means for a municipality to comply with MEP. Although the choice of BMPs lies with the municipality, DEP must provide clear guidance and set a regulatory floor through its menu of BMPs. The six MCMs will reduce pollution to MEP and protect water quality only if they are properly and fully implemented through sufficient BMPs and a robust and comprehensive stormwater management program. *Env'tl. Def. Ctr., Inc.*, 344 F.3d at 856 (quoting 64 Fed. Reg. at 68,753). The permitting authority cannot merely ask the municipalities to choose any number of inadequate BMPs to comply with the MEP standard and sit on its hands while the MS4s fail to reduce pollution from stormwater. Instead, to satisfy the six MCMs and MEP standard, the permitting authority must provide for the best possible methods and include detailed guidance, clear interim benchmarks, and timelines for meeting those benchmarks.

The BMPs chosen by the MS4 to meet the six MCMs must “*in fact* reduce discharge the maximum extent practicable.” *Env’tl. Def. Ctr., Inc.*, 344 F.3d at 855. Although the permitting authority provides menus of BMPs pursuant to 40 C.F.R. § 123.35(g), the municipalities’ choices may not be sufficient to meet the MEP standard. *Id.* at 855. Without review “on the front end of permitting,” and adequate BMPs to ensure the MEP standard is met, a municipality can abuse the insufficient requirements by choosing measures that fall well short of the MEP. *Id.*

While the draft permit parrots the statutory and regulatory language regarding MEP protecting water quality, for the most part it lacks the specific, detailed requirements ensure that these baseline standards are met. These details are necessary because MEP “means to the fullest degree technologically feasible for the protection of water quality, except where costs are wholly disproportionate to the potential benefits.” *N. Wildlife Fed’n v. N.C. Div. of Water Quality*, 06 EHR 0164, at 21 (2006) (citing *Hael v. Dep’t of Law*, 97 F.3d 1152, 1155 (9th Cir. 1996), *Rybachek v. EPA*, 904 F.2d 1212, 1289 (9th Cir. 1990), and *Ass’n of Pac. Fisheries v. EPA*, 615 F.2d 794, 805 (9th Cir. 1980)). This may necessitate the requirement to adopt measures more stringent than standard practices. *Id.* In North Carolina, the issuing agency was ordered to implement “technologically feasible” measures to reach the MEP; specifically 200-foot buffers for perennial streams, 100-foot buffers “for intermittent streams, a zero percent impervious surface threshold for structural stormwater controls, no new impervious surface in the one-hundred year floodplain, and water quality standards for [various pollutants].” 1/22, 24.

Instead of requiring the implementation of such technologically feasible methods to legally satisfy the MEP standard, the draft general permit merely promotes standard practice by taking cost into account in its MEP definition with a business as usual approach, thereby ignoring the substantial public and ecological benefits of improved water quality. Moreover, it does not contain specific provisions that require the best controls and set forth sufficiently detailed and clear guidance for fully implementing these controls (including interim goals and timelines) to ensure that municipalities protect and meet the MEP standard.

The most conspicuous shortcoming of the permit is its failure to require MS4s to implement low impact development (LID) standards for new development and redevelopment. Without requiring LID, we do not believe the permit is sufficient to meet the baseline MEP standard. Our concerns regarding this issue are detailed in comments 2 and 3 on pages 6-8.

More generally, with respect to all six MCMs, the permit on a whole fails to include enough specificity to ensure implementation of the MCMs will meet the MEP standard. The permit should contain strong measurable goals coupled with specific timelines and milestones for meeting such goals for each MCM.

The permit should also require a robust monitoring program and better reporting requirements to ensure that MCMs are fully met and to assist in the quantification of pollutant load reductions. This is particularly of concern for meeting the Bay

requirements and forthcoming Bay TMDL, along with assuring progress toward achieving local TMDLs, as appropriate. The current permit merely requires municipalities seeking renewal of their permits to submit reports once every two years. This level and frequency of reporting is not sufficient to ensure that interim goals are being attained and stormwater pollution is being reduced to the maximum extent practicable. Nor does biannual reporting allow the DEP to adequately track and report reductions made to urban/suburban stormwater runoff as part of progress toward meeting the Commonwealth's Chesapeake Bay-based cap loads. We believe that, at a minimum, annual reporting requirements are needed to track permit compliance and adequately assess progress toward achieving local and regional water quality requirements.

The Pennsylvania Campaign for Clean Water has submitted written comments to which we are a signatory. These comments include a detailed analysis of each of the six MCMs, noting where elements are strong and where they are weak, and providing suggestions for improvement. Instead of repeating those comments here, we incorporate them by reference.

2. The permit does not require municipalities to mandate the use of low impact development (LID) practices for all new development and redevelopment.

In order to ensure that MS4 permittees are meeting the MEP standards, the permit should require, not simply encourage, low impact development (LID). It is beyond debate that LID is the preferred method of stormwater management. LID reduces the generation of stormwater through careful site design, recognizes stormwater as a resource, maximizes the protection of natural soils and vegetation, minimizes earth disturbance and the creation of impervious surfaces, and aims to mimic the natural hydrologic cycle. In order to achieve the full benefits of LID, and thereby reduce stormwater pollution to the maximum extent practicable, DEP must require MS4 municipalities to implement LID when addressing construction and post-construction runoff. We note that EPA Region 9 is taking the approach of requiring LID in MS4 permits in order to meet baseline requirements of the Clean Water Act. For example, the Washington State Pollution Control Hearings Board found that the issuing agency appropriately included a LID provision in an MS4 permit. *Puget Soundkeeper Alliance v. Dep't of Ecology*, PCHB NOS. 07-022, 07-023, at 46-47 (2009), available at <http://www.eho.wa.gov/searchdocuments/2009%20archive/pchb%2007-022,07-023%20findings%20of%20fact%20conclusions%20of%20law%20and%20order.pdf>. But at the same time, because the LID provision did not provide guidance as to implementation, the Board found that the permit was insufficient to satisfy state law requirements and the federal MEP standard. *Id.* at 46-47. To comply with these requirements, the Board ordered the agency to implement "additional requirements with respect to broader use of LID." *Id.* at 46-47, 55. The Board extensively noted the feasibility and effectiveness of LID for stormwater management and cited several MS4 permits in California that have required LID. *Id.* at 21-22 (citing Santa Monica, Santa

Barbara, San Diego, Ventura County, and San Francisco Bay Regional permits); see at 22-44.

We commend DEP for recognizing the importance of LID in its Stormwater BMP Manual, finalized in December 2006. In Chapter 4, the BMP Manual sets forth the process for LID site design, with preference for using nonstructural BMPs in Chapter 5 and green infrastructure structural BMPs in Chapter 6. The permit, however, contains minimal reference to the BMP Manual and little guidance to municipalities on how to use it. The permit should provide municipalities with a clearer framework for use of the Manual to meet LID requirements.

The simplest way to provide this guidance is to revise the model ordinance to provide further consistency with the BMP Manual, expressly adopt the LID site assessment design process, and require adoption of LID practices. Specific recommendations for achieving this within the ordinance are provided in comment 3 below.

3. The draft model ordinance is an improvement from the 2002 model ordinance, but it needs to be further strengthened so that municipalities will employ LID standards and reduce pollution to the maximum extent practicable.

The permit requires municipalities to adopt the 2009 model ordinance or an ordinance approved under a recent Act 167 plan. The requirement to adopt the model ordinance is one of the critical elements of the MS4 permit. It allows permittees to have in place enforceable mechanisms for meeting several of the MCMs, most notably MCM 4 (Construction Site Runoff Control) and MCM 5 (Post-Construction Stormwater Management in New Development and Redevelopment).

The draft 2009 model ordinance is an improvement over the 2002 model ordinance and will get MS4 municipalities much closer to the requirement of reducing pollution to the maximum extent practicable. Specific improvements are noted in the Pennsylvania Campaign for Clean Water's comments, which we incorporate by reference.

We note, however, the model ordinance is still in draft form and is not yet finalized. The fact that it is not yet finalized makes it difficult to provide sufficient comment on the requirement to adopt the ordinance. Without knowing what the specific provisions of the final model ordinance will be, it is hard to say whether the permit will meet the MEP standard required by the Clean Water Act.

With that said, it is clear that the draft 2009 model ordinance is not strong enough to meet the MEP standard. To this end, we were pleased to hear DEP staff at the Harrisburg public meeting state that further revisions are still being made to the ordinance to strengthen it.

CBF has developed a model ordinance that follows the general structure of DEP's model ordinance, yet further incorporates the concepts and processes of the BMP

Manual and includes elements more stringent than the BMP Manual where necessary to meet the MEP standard. A copy of our model ordinance is provided for your consideration. The key aspects of this ordinance are:

- Incorporation of the Stormwater BMP Manual.
- Volume control standards that require capture and treatment of the increase in the pre- to post-development total runoff volume from the 1-year, 24-hour design storm.
- Strong recommendations to use the Small Storm Hydrology Method (Pitt 2003) to calculate runoff and employ it throughout the site to evaluate multiple natural micro drainage patterns and place nonstructural and “green” BMPs throughout the site to manage runoff at the source.
- Water quality standards that limit pollutant load to 0.28 lb/ac/yr for total phosphorus and 3.00 lb/ac/yr for total nitrogen for low impervious sites (less than 40% impervious). High impervious surface areas (greater than 40% impervious) limited to 0.4528 lb/ac/yr for total phosphorus and 2.68 lb/ac/yr for total nitrogen .
- Exemptions from peak rate control standards where runoff will already be sufficiently controlled through volume controls.
- More stringent erosion and sediment control standards to improve minimization of disturbance, erosion, and sedimentation.
- Required natural features site analysis and mapping.
- Required development of a concept plan that includes complete natural features site analysis and mapping, plus preliminary locations of BMPs and development footprints.
- Required onsite pre-application meeting to review the concept plan and explore the use of LID to the maximum extent practicable.

The current draft model ordinance does not contain such provisions, and is therefore insufficient to ensure that municipalities adopting it are reducing pollution to the maximum extent practicable. DEP should include these or substantially similar provisions in its final model ordinance in order to meet that legal standard.

4. The permit should not discourage municipalities from adopting ordinances that are stronger than DEP’s model ordinance.

The permit requires municipalities to adopt the 2009 model ordinance or an ordinance approved under a recent Act 167 plan. DEP should revise this requirement so that municipalities desiring to adopt ordinances stronger than the model ordinance may do so without having to apply for an individual permit.

5. The permit must require stronger measures to ensure that municipalities discharging stormwater into impaired waters are reducing pollution sufficient to meet water quality standards.

DEP's draft permit includes additional requirements for MS4s in impaired waters with a TMDL has been approved. While this is an improvement over the first MS4 Phase permit that was finalized in 2002—which had no such requirements—it is a far cry from what is required under the Clean Water Act.

The permit's provisions addressing discharges to impaired waters do not meet certain minimum requirements of the federal Clean Water Act and Pennsylvania law, specifically:

- The provisions addressing discharges to impaired waters with an approved Maximum Daily Load (TMDL) do not contain measures to ensure compliance with wasteload allocations.
- The permit lacks provisions incorporating Chesapeake Bay load allocations requiring compliance with such allocations.
- The permit lacks any provisions necessary to achieve compliance with water quality standards in impaired waters, regardless of whether a TMDL has been approved.
- The permit lacks any provisions prohibiting the addition of new discharges that cause or contribute to the impairment.

a. The permit's provisions addressing discharges to impaired waters with approved TMDL do not contain measures sufficient to ensure compliance with the TMDL's wasteload allocations.

DEP's draft permit includes additional requirements for MS4s in impaired waters with a TMDL has been approved. While this is an improvement over the first MS4 Phase permit that was finalized in 2002—which had no such requirements—it is a far cry from what is required under the Clean Water Act.

The Clean Water Act requires states to establish TMDLs for impaired waters so that impairment can be remedied and water quality standards can be met. 33 U.S.C. § 1313(d)(1)(C); 40 C.F.R. § 130.7(c)(1). Point sources are assigned wasteload allocations (WLAs) necessary to meet the overall TMDL pollutant load cap. 40 C.F.R. 130.2(h), (i). WLAs must be expressed in numeric form in the TMDL. See *id.* § 130.2(h), (i).

Once a TMDL is approved and specific WLAs have been established for point sources within the watershed, the NPDES permits for those point sources must be consistent with the terms of the TMDL and the WLA, and permit effluent limitations must be established as "consistent with the assumptions and requirements of any available waste load allocation." 40 C.F.R. § 122.44(d)(1)(vii)(B); see also *Dioxin/Organochlorine Ctr. v. Clarke*, 57 F.3d 1517, 1520 (9th Cir. 1995) (citing 40 C.F.R. § 130.2). In this respect, the WLA is a type of water quality-based effluent limit (WQBEL) which must be imposed upon the point source in order for water quality standards to be met. 40 C.F.R. § 130.2(h); 25 PA. CODE §96.4(d).

Because MS4s are point sources under the Clean Water Act, if they are contributing to the impairment of waters for which a TMDL is developed, they must be given a specific, numeric WLA within the TMDL. 40 C.F.R. § 130.2(h), (i). The NPDES MS4 permit in turn must incorporate permit conditions sufficient to ensure that WLAs are achieved so that water quality standards are met. See 25 PA. CODE § 96.4(f)(2) (WLAs and effluent limitations “shall be made more stringent if the cumulative loading . . . does not meet [applicable water quality standards].”); see also *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*, EPA Memorandum from Robert H. Wayland and James A. Hanlon to Water Division Directors, Regions 1-10 (November 22, 2002) [hereinafter EPA Memo].

The draft permit requires the implementation “to the maximum extent practicable (MEP)” of a Stormwater TMDL Plan “that achieves the pollutant reductions consistent with the applicable TMDL.” The permit requires the adoption of two of the seven listed TMDL Control Measures over the five-year life of the permit. In noncommittal language, the permit also states that “all other measures needed to reduce the pollutant load consistent with the TMDL shall be implemented *as soon as practicable*, in accordance with the Plan timeline, to make *measurable progress* in *substantially reducing* the applicable pollutant loads” (emphasis added).

These permit conditions are not sufficient to meet the minimum requirements of the Clean Water Act. TMDLs are required under the Clean Water Act for waters for which technology-based effluent limits “are not stringent enough to implement any water quality standard.” 33 U.S.C. § 1313(d)(1)(A), (C). MEP is akin to technology-based effluent limits for MS4s. 66 Fed. Reg. 68722, 68750 (describing MEP as “a different technology standard for all pollutants”); see also *N.C. Wildlife Fed’n v. N.C. Div. of Water Quality*, 06 EHR 0164, at 21 (2006) (MEP “means to the fullest degree technologically feasible for the protection of water quality, except where costs are wholly disproportionate to the potential benefits.”). In impaired waters where stormwater discharges from MS4s are among the contributors to the impairments, baseline MEP limits are not sufficient to protect receiving waters—if they were sufficient, MS4s would not be contributing to the impairment. Rather, as discussed above, more stringent WQBELs, in the form of WLAs incorporated into NPDES permits, are required. 40 C.F.R. § 122.44(d)(1)(vii)(B); 25 PA. CODE § 96.4(b), (d); see also EPA Memo. Accordingly, as a matter of law, implementation “to the maximum extent practicable,” “as soon as practicable,” in order to make “measurable progress” in “substantially reducing” pollutants is just not good enough in a TMDL watershed. Rather, *full* implementation, to the level necessary to reduce pollutants to *fully* meet WLAs, is required.

To create additional uncertainty as to whether and how permittees will achieve compliance with WLAs, the permit requires permittees to establish a timeline for implementation of their TMDL Implementation Plans, but does not set a temporal limit on the timeline. Conceivably, a permittee could establish a 50-year timeline and be

considered in compliance with the permit. This open-ended timeline for compliance not permitted under Pennsylvania law. DEP is not permitted to issue NPDES permit without conditions necessary to ensure compliance with water quality standards. 22 Pa.C.S. §§ 92.2(b)(14), 92.31(a)(5), 92.73(5). Provisions that allow the implementation of a TMDL Implementation Plan to extend beyond the statutory maximum five-year term of the permit would violate this requirement because the permits would not contain effluent limits necessary to meet water quality standards within the life of the permit. Accordingly, DEP must specify in the permit that the maximum timeline for full compliance of the TMDL Implementation Plan is five years.

The section of the permit that sets forth the seven TMDL Control Measures and reduction of only two of them is woefully inadequate for several reasons. First, while some measures are good and should have true water quality benefits, others are weak. We are concerned that, when given the choice, municipalities will choose the least burdensome practices without any consideration of pollution reduction potential. It is difficult to fathom how planting 25 trees and retrofitting one detention basin over five years will make any measurable difference in pollutant loads, let alone fully achieve WLA reduction requirements.

Second, the permit allows for the haphazard installation of stormwater BMPs throughout the landscape without regard to hydrological connectivity. Importantly, the permit contains absolutely no requirements to quantify the pollution reductions achieved from implementing these practices. This is not only technically unjustifiable, but is also wasteful of financial resources. We believe that MS4s discharging to waters with a TMDL must develop a systematic and quantifiable approach to reducing stormwater load. Quantification of critical source areas of pollution and systematic approaches towards achieving reductions is absolutely necessary in order to determine whether TMDL wasteload allocations have been achieved. See EPA Memo, at 5 (requiring permitting authorities to include discussion of BMP selection and assumptions, which may be included in the plan, and suggesting that permitting authorities require permittees to provide supporting information as to how its plan will meet WLAs); see also, Florida Stormwater Association Educational Foundation Research Advisory Council, *Quantifying Pollutant Loads Associated with Particulate Matter and Stormwater Sediment Recovery through Current MS4 Source Control and Maintenance Practices* at 3 (June 19, 2008) (Quantification analysis methodology "is needed since MS4s are faced with quantifying load reductions in Basin Management Action Plans to achieve TMDLs.").

The hydrological analysis required to quantify pollution loads from stormwater runoff under specific BMP scenarios must identify the runoff contributions from the various land cover components of a specific area, as affected by soil characteristics and land cover type. It must address how such runoff will change in response to rainfall events of differing intensities and precipitation amounts. The hydraulic design elements must be able to realistically calculate the flow path components of runoff and route runoff through storage or infiltration structures. It should also be capable of partitioning runoff between overland discharge from subsurface infiltration components. And it must accurately

estimate pollutant load and BMP efficiency scenarios on a spatially-specific basis so as to allow for critical source determination analysis and prioritization.

There are a multitude of methodologies available to analyze and quantify pollutant loads from stormwater that meet these selection criteria. These include continuous simulation models such as PCSWMM and HSPF, the Long-Term Hydrologic Impact Assessment (L-THIA) model, GWLF-PRedICT, TSA TOOLS LID Module, the Loading Simulation Program in C++ (LSPC), and WinSLAMM. Of course, each of these models has limitations, must be calibrated for local conditions (e.g., precipitation, hydrology, soils, etc.), and modified so as to employ locally accepted event-mean-concentrations for the land uses in question.

Third, the permit does not contain sufficient requirements for monitoring progress toward meeting WLAs. EPA regulations and guidance require such monitoring. 40 C.F.R. § 122.44(i); EPA Memo, at 5. Monitoring is necessary to ensure that the iterative, adaptive management approach for controlling pollution from MS4s achieves the water quality goals of the Clean Water Act. Requirements must be robust and frequent enough to inform DEP and the permittee of any BMP adjustments that are necessary to achieve WLAs within the five-year life of the permit.

Finally, we offer specific critiques of each of the seven proposed TMDL Control Measures:

TMDL Control Measure 1. We recognize and value the importance of forest riparian buffers and their pollution reduction potential. However, the control measure lacks specific requirements to ensure that the pollution reduction benefits of riparian buffer restoration are achieved. It does not set a minimum goal, in terms of stream miles or acreage, for riparian buffer establishment. It does not require a minimum width for buffers that are restored, nor for the provisions of the buffer ordinance.

TMDL Control Measure 2. The control measure does not specify whether the ordinance requiring disconnection is retroactive. We assume it is not, since retroactivity would eliminate the need to establish and implement a disconnection program. Following this assumption, the control measure lacks minimum goals in terms of acreage of impervious surface disconnected or the like. Without minimum standards, the practice lacks any assurances that it will achieve meaningful reductions.

TMDL Control Measure 3. There is no requirement to plant trees in strategic locations or in the manner (i.e., reforestation versus widely dispersed shade trees) where they will best be able to perform stormwater management and pollution removal functions. For tree plantings to be an effective stormwater management technique, they should be placed in hydrologically connected areas where the opportunity intercept precipitation and runoff is greatest. In addition, the minimum number of plants for both trees and tree seedlings is too low by several orders of magnitude. This is particularly true for the larger trees. A requirement of 50 trees in larger Phase II municipalities and 25 trees in smaller Phase II municipalities is quite inadequate. Rather than employ a method that

requires a minimum number of trees, it is more appropriate and effective to require minimum percentage of canopy cover within the MS4 jurisdiction. As a general rule American Forests recommends that urbanized areas maintain at least a 40% tree canopy in order to achieve a minimum level ecological services. The Center for Watershed Protection has recommended that to achieve water quality benefit, suburban landscapes should maintain a 65% or greater tree canopy, urban areas with imperviousness of 26 to 60% or greater a minimum of 40% or greater canopy, and ultra urban areas a minimum of tree canopy of 25%. These recommendations have been adopted by Chesapeake Bay Program's Urban and Community Tree Canopy Goals (Directive 03-01). DEP's current proposal falls well short of these recommendations and would yield little or no water quality benefit.

TMDL Control Measure 4. Again, there is no minimum drainage area requirement, the amount of recharge/infiltration BMPs to be installed or the volume of stormwater such systems will infiltrate. Such requirements are critical in order to ensure that the TMDL Implementation Plan will actually achieve reductions.

TMDL Control Measure 5. A minimum requirement to retrofit one basin over the five year life of the permit is woefully weak and unlikely to lead to substantial reductions in pollutant load within the receiving waterbody. As employed by other MS4 permits, we believe that over the five-year permit cycle a set percentage (e.g., 25%) of the MS4 area be examined for retrofit opportunities and implemented accordingly.

TMDL Control Measure 6. Eroded stream banks are a symptom of poor stormwater management caused by the failure to control and properly manage stormwater upstream. Without fixing the problem of increased imperviousness and concentrated flows upstream of eroded stream banks, implementing stream bank restoration measures will likely be unsuccessful in reducing pollutant loads over the long term will simply be costly and ineffective. It is akin to treating the symptom of a disease not the cause. Rather, watershed repair must start at the source, and stream restoration should be employed only after or in conjunction with upstream retrofits to stormwater infrastructure.

TMDL Control Measure 7. The minimum requirements for green roofs, rain gardens and pervious pavement practices are only suggested, thus greatly diminishing the effectiveness of this measure. The term "green structural BMPs" should be used instead of "green infrastructure," which has a much broader meaning than these practices.

Our review of DEP's proposed Stormwater TMDL Implementation Plan requirements clearly indicates that the standards set forth therein do not meet the minimum standards established by EPA and therefore do not constitute a true and appropriate TMDL Implementation Plan.

b. The permit lacks any provisions requiring compliance with Chesapeake Bay load allocations, which are “functionally equivalent” to TMDL wasteload allocations.

Federal regulations provide that more stringent measures necessary to meet water quality standards should be included in an MS4 permit where there is an approved TMDL “or *equivalent analysis* provides adequate information” upon which to develop such measures. 40 C.F.R. § 122.34(e)(2) (emphasis added). The tributary load allocations resulting from the work of the Chesapeake Bay Program and partners, together with the development of the source load allocations set forth in the Pennsylvania Tributary Strategy, constitutes such an “equivalent analysis” and “provides adequate information” upon which load allocations and more stringent measures to meet them can be based. Accordingly, DEP should revise the MS4 permit to require each MS4 municipality within the Chesapeake Bay watershed to institute more stringent measures to meet Chesapeake Bay Tributary Strategy load allocations, similar to the process underway for wastewater treatment plants.

c. The permit lacks any provisions ensuring that discharges to impaired waters comply with water quality standards.

MS4s in TMDL-approved waters and waters where Chesapeake Bay load allocations are applicable are not the only municipalities that must meet more stringent water quality-based permit requirements under the Clean Water Act. In Pennsylvania, NPDES MS4 permits in all impaired waters, whether or not a TMDL has been developed and approved, must contain more stringent limits necessary to achieve compliance with water quality standards.

The Clean Water Act is the nation’s preeminent statute addressing pollution of our waters. Its overall objective is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). To meet this objective, it provides as a goal the attainment of water quality at levels sufficient to protect aquatic life and recreation (often referred to the “fishable and swimmable” goal). *Id.* § 1251(a)(2).

The Clean Water Act establishes two basic regulatory programs for meeting its water quality goals. First, the Act requires each state to establish water quality standards for its waters that are necessary to meet the Act’s water quality goal of “fishable and swimmable” waters. Second, the Act requires point sources of pollution (such as MS4s) to obtain and comply with National Pollution Discharge Elimination System (NPDES) permits that contain effluent limitations on the pollution they discharge. *Id.* §§ 1311, 1342.

Under the Clean Water Act, NPDES permits must include effluent limitations on pollution discharged by point sources. *Id.* § 1311. An “effluent limitation” is defined by the Act as “any restriction established by a State or [EPA] on quantities, rates, and

concentrations of chemical, physical, biological, and other constituents which are discharged from point sources” *Id.* § 1362(11).

The establishment of effluent limitations on pollutants in NPDES permits is governed by section 301 of the Clean Water Act, 33 U.S.C. § 1311. This section of the Act requires two general categories of effluent limits on pollutants to be included in NPDES permits: (i) technology-based effluent limits; and (ii) if still necessary to meet water quality standards, more stringent water quality-based effluent limits. *Id.* § 1311(b)(1)(A), (C) (requiring technology-based limits); *Id.* § 1311(b)(1)(C) (requiring “any more stringent limitation . . . necessary to meet water quality standards”).

By requiring NPDES permits to include more stringent water quality-based effluent limits, the Clean Water Act recognized that technology-based effluent limits may not be enough to meet state water quality standards for particular water bodies, and thus, alone may not satisfy the Act’s “fishable and swimmable” goal.

In *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999), the Ninth Circuit interpreted section 402(p)(3)(B) of the Clean Water Act as not requiring MS4s to comply strictly with section 301(b)(1)(C). We disagree with the Ninth Circuit’s decision in *Browner*, as it is fundamentally at odds with the Act’s overarching water quality goal of “fishable and swimmable” waters, which necessarily requires achievement of water quality standards. Streams impaired by stormwater pollution from MS4s may indeed need permit limits that are more stringent than MEP to ensure that water quality standards are met so they become “fishable and swimmable.”

But even under the *Browner* court’s construct of the Clean Water Act, DEP is authorized, and indeed required, to include more stringent water quality-based effluent limits for MS4s in impaired waters. The court recognized in *Browner* that section 402(p)(3)(B)(iii) of the Clean Water Act gave the permitting agencies the authority to require those stricter limits necessary to meet water quality standards in MS4 NPDES permits. *Browner*, 191 F.3d at 1166 (stating that, because the Act allows for inclusion of permits of “such other provisions as [EPA] or the State determines appropriate for control of such pollutants, [EPA and the states] ha[ve] authority to determine that ensuring strict compliance with state water quality standards is necessary to control pollutants”); see *Bldg. Indus. Ass’n of San Diego County v. State Water Res. Cont. Bd.*, 22 Cal. Rptr. 3d 128, 134-35 (Cal. Ct. App. 2004) (holding that, pursuant to section 402(p)(3)(B)(iii), the state had authority to issue an MS4 permit prohibiting discharge that “cause or contribute to the violation of water quality standards”).

In Pennsylvania, DEP has this authority and, moreover, is mandated to use it. Pennsylvania’s own regulations governing NPDES permits, set forth in 25 Pa. Code Chapter 92, clearly *require* all such permits to contain provisions necessary to ensure compliance with state water quality standards. Specifically:

- An NPDES permit³⁶ cannot be issued if the permit conditions do not ensure compliance with applicable water quality requirements of all affected states. 25 PA. CODE §§ 92.73(5), 92.2(b)(2) (incorporating by reference 40 C.F.R. § 122.4(d)).
 - An NPDES permit cannot be issued if the discharge is not in compliance with water quality-based effluent limits necessary to meet water quality standards as required by section 301 of the Clean Water Act. *Id.* § 92.31(a)(1).
 - An NPDES permit cannot be issued if the discharge is not in compliance with any more stringent limitation required to implement any applicable water quality standard. *Id.* § 92.31(a)(5).
 - Water quality-based effluent limitations “*must*” be placed on all pollutants that the permitting authority determines “are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standards, including State narrative criteria for water quality.” *Id.* § 92.2(b)(14).
- d. The permit lacks any provisions prohibiting the addition of new discharges that cause or contribute to the impairment.**

Pursuant to 40 C.F.R. § 122.4(i), an NPDES permit shall not be issued to “a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards.” 40 C.F.R. § 122.4(i). In impaired watersheds where a TMDL has been developed, a new source or discharger may be issued an NPDES permit if (i) a WLA has been allotted within the TMDL for the new source or new discharger; and (ii) compliance schedules have been established for all point and nonpoint sources within the watershed sufficient to correct the impairment. *See Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1015 (9th Cir. 2007), *cert. denied*, *Carlota Copper Co. v. Friends of Pinto Creek*, 2009 U.S. LEXIS 381 (U.S. 2009). In impaired watersheds where TMDLs have been established, a new source or discharger that would cause or contribute to the impairment shall not be issued an NPDES permit. *Id.*

As new development proceeds within MS4 municipalities, new sources of stormwater will be added to the MS4 unless the project infiltrates, evapotranspires, and/or reuses all stormwater. To meet the requirements of 40 C.F.R. § 122.4(i), the MS4 NPDES permit must include a provision prohibiting the MS4 from allowing new discharges of stormwater that cause or contribute to a violation of water quality standards. Where waters are already impaired, MS4s must ensure that any new development will result in no net increase in volume or pollutant loads from predevelopment conditions, unless a TMDL exists with WLAs for the new development and compliance schedules are in

³⁶ Chapter 92 defines “NPDES permit” broadly to include all permits or equivalent documents or requirements issued by EPA or DEP to regulate the discharge of pollutants under section 402 of the Clean Water Act, which includes MS4 NPDES permits. 25 PA. CODE § 92.1.

place to address all other sources of impairment within the watershed. The draft permit does not contain any such requirements.

e. Recommendations

As discussed above, the draft permit does not contain sufficient provisions to meet baseline requirements of the Clean Water Act, federal regulations, and state regulations concerning discharges to impaired waters. Moreover, those provisions that do address impaired waters are only applicable *after* a TMDL has been established. This approach would allow stormwater discharges to continue to contribute to violations of water quality standards until a TMDL is developed and approved for an impaired water. Not only does this approach violate state and federal law, it is simply poor public policy. John H. Minan, *Municipal Separate Storm Sewer System (MS4) Regulation Under Federal Clean Water Act: The Role of Water Quality Standards?*, 42 SAN DIEGO L. REV. 1215, 1255. Such an approach will unnecessarily delay the cleanup of the Commonwealth's waters and ultimately increase the costs of that cleanup effort. For example, parts of the Schuylkill River were 303(d)-listed for algal growth and sediment pollution in 2002, but will not receive a TMDL until 2015. EPA, Listed Water Information, http://oaspub.epa.gov/tmdl/enviro.control?p_list_id=PA03F00924_990318-1430-ACW&p_cycle=2004 (last visited June 4, 2009). Under the draft permit, a municipality that discharges nutrients or sediment into an impaired segment of the Schuylkill River through stormwater, for instance, would not require additional measures in its MS4 permit until a TMDL is developed in 2015 at the earliest. In this manner, the flawed process will allow dischargers to continue to contribute to the existing impairment of Pennsylvania's streams without any requirements other than meeting the baseline MCMs.

To address these legal and policy shortfalls, we recommend the following changes to the draft permit:

- (1) Add a new provision that prohibits any discharge of stormwater that causes or contributes to a violation of water quality standards.**
- (2) Add a new provision that incorporates by reference any applicable numeric WLAs into the permit and requires full compliance with TMDL WLAs.**
- (3) Add a new provision stating that, for MS4s within the Chesapeake Bay watershed, applicable numeric Chesapeake Bay load allocations are incorporated by reference and full compliance with such load allocations is required.**
- (4) Revise TMDL Requirements (Part C) to include special requirements for MS4s discharging into *all* impaired waters, not just waters with approved TMDLs.**

We recommend including separate sections, one applicable to impaired waters with an approved TMDL, and another that governs impaired waters without an approved TMDL, with the following specific provisions:

(a) Discharges to Impaired Waters with an Approved TMDL.

- (i) Require development and implementation of a comprehensive Stormwater TMDL Implementation Plan which fully meets EPA's nine elements for such plans and sets forth specific projects, practices, and programs to reduce pollution from stormwater runoff. The plan must quantify such projects, practices, and programs to show that WLAs set forth in the approved TMDL will be met. In addition, it must include a specific timeline and milestones for full implementation of the plan so that WLAs will be fully achieved within the five-year term of the permit.
- (ii) Require monitoring and annual reporting of progress in implementing the plan to show that WLAs have actually been met.

(b) Discharges to Impaired Waters without an Approved TMDL.

- (i) Require development and implementation of a comprehensive Stormwater Pollution Reduction Implementation Plan which meet EPA's nine minimum elements for such plans.
 - Implementation actions/management measures: these describe actions and/or management measures necessary to implement reductions including a description of effectiveness.
 - Timelines: defines the milestones of the implementation activities including a schedule for revising point source permits to be consistent with the TMDL. The schedule also includes when best management practices and/or controls will be implemented.
 - Reasonable assurance: reasonable assurance that the implementation activities will occur. Reasonable assurance means a high degree of confidence that reductions will be implemented by Federal, State or local authorities and/or through voluntary action.
 - Legal or regulatory controls: a description of the legal authorities under which implementation will occur.
 - Time required to attain water quality standards: an estimate of the time required to achieve water quality goals specific to the various sources.
 - Monitoring plan (see 4.b.ii): a monitoring plan designed to determine the effectiveness of the implementation actions and help determine whether reduction goals are met. The monitoring

plan is intended to describe whether allocations are sufficient to attain water quality standards and how to determine whether implementation actions, including interim milestones, are occurring as planned. The monitoring approach must also contain a methodology for assessing the effectiveness of management practices and the control of actions.

- Milestones for attaining water quality standards: a descriptive list of milestones that will be used to measure progress in attaining water quality standards. The monitoring plan must contain incremental, measurable milestones consistent with the specific implementation action and the time frames for implementing those actions.
- TMDL revision procedures: a description of when the TMDL will be revised if specific milestones for implementing actions or interim milestones for attaining water quality standards are met.
- Tracking Implementation: To achieve water quality goals, the plan will include a time line for implementation of identified management actions. Especially in the case of nonpoint source controls, the specific management actions will be distributed at various locations in the watershed. Tracking of the implementation of management actions over time will provide valuable information.
- Public Participation: Public participation is a requirement of the TMDL process and is vital to a TMDL's success. It will be vital to the successful completion and adoption of the Implementation Plan and ultimately for achieving water quality goals.

- (ii) Require monitoring and annual reporting of progress in implementing the plan to show that compliance with water quality standards has actually been met. The minimum criteria for chemical, biological, and physical monitoring should be established as:

Chemical Monitoring:

A minimum of six (6) storm events shall be monitored per year at established monitoring locations with at least one (1) occurring per quarter. Quarters shall be based on the calendar year. If extended dry weather periods occur, baseflow samples shall be taken at least once every other month at the monitoring stations if flow is observed.

Discrete samples of stormwater flow shall be collected at the monitoring stations using automated or manual sampling methods. Measurements of dissolved oxygen, temperature, and water temperature shall be taken.

At least three (3) samples per year that are determined to be representative of each storm event shall be submitted to a laboratory for analysis according to methods listed under 40 CFR §136 and event mean concentrations (EMC) shall be calculated for:

- Total Nitrogen
- Total Suspended Solids
- Total Phosphorus

Data collected shall be used to estimate annual and seasonal pollutant loads and reductions and for the calibration of watershed assessment models.

(5) Add a new provision that prohibits MS4s in impaired waters from allowing new development or redevelopment that causes or contributes to a violation of water quality standards.

We recommend including further guidance in the permit on this point, specifically by requiring the municipality to enact and implement an ordinance more stringent than the model ordinance. This ordinance would require all new development and redevelopment to achieve no net increase in the peak rate and volume of stormwater runoff and pollutant load from predevelopment conditions. The ordinance can achieve the no net increase requirement by:

- (a) Requiring LID and establishing a process that integrates stormwater management into initial site design, through requirements for natural features site analysis and mapping, use of nonstructural and green infrastructure structural BMPs, mandatory site visits with sketch plans, and natural features mapping prior to submission of preliminary plans, etc.
- (b) Establishing net nutrient-based stormwater loading criteria of zero for nitrogen and phosphorus, and having developers demonstrate compliance with such criteria in post-construction stormwater management plans and calculations. "Net" loading criteria are determined as the difference between pre- and post-development nutrient loads.
- (c) Requiring more stringent volume controls and BMP sizing criteria than is currently required for the NPDES construction program (i.e., require runoff reduction of the full difference between the pre- and post-development one-year, 24-hour runoff volume)
- (d) Requiring use of the small storm hydrology method or similar methodology to size, calculate, and place multiple stormwater BMPs throughout the site to treat runoff at the source.

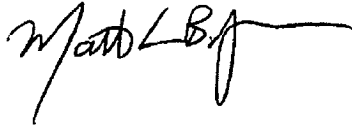
To be consistent with 40 C.F.R. § 122.4(i), the permit may allow for new development or redevelopment with a net increase in runoff peak rate, volume and pollutant loads if: (i) an approved TMDL sets forth a WLA for the new development or redevelopment; and (ii) compliance schedules have been established for all point and nonpoint sources within the watershed sufficient to correct the impairment. Within the context of this provision, we contend that adopt standards similar to Virginia in which permits for new developments and redevelopments are required to meet express nutrient-based loading criteria as well as more stringent volume control criteria (e.g., reduce runoff of the full difference between pre- and post-development one-year, 24-hour runoff volume necessary to ensure that LID is implemented and WLAs are not exceeded.

6. The permit must include opportunities for the public to comment on and participate in the stormwater management and TMDL implementation plans required to meet each municipality's permit.

Finally, the draft permit should include specific opportunities for public participation. Municipalities develop these plans by providing notice of draft plans and opportunities for public comment before they are finalized. These opportunities for public participation are important enough that they should not be left to the municipality to be addressed through MCM 2 (Public Participation and Involvement), but they should be stand-alone conditions of the general permit required in every instance. Notice in the *Pennsylvania Bulletin* and an opportunity to comment on draft plans should be provided to the general public so that residents from downstream municipalities and other users of rivers and streams impacted by stormwater runoff have a chance to comment on such plans.

Thank you for the opportunity to submit these comments. If you have any questions or would like to discuss these comments further, please feel free to contact us.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Matt Royer", with a long horizontal flourish extending to the right.

Matthew Royer
PA Staff Attorney

A handwritten signature in black ink, appearing to read "Harry Campbell", with a long horizontal flourish extending to the right.

Harry Campbell
PA Science Advocate

cc: John Hines
Ken Murin
Meg Murphy

Attachment

CBF Letter on Delaware WIP



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

**Comments from the Chesapeake Bay Foundation on
 Delaware's Draft Watershed Implementation Plan
 October 29, 2010**

First, we would like to sincerely commend and thank Delaware for being a willing and cooperative partner in the restoration of the Chesapeake Bay and its tidal rivers. Most notably, during the last several years of technical work on the Chesapeake Bay Total Maximum Daily Load (TMDL) and associated implementation plan, Delaware has consistently expressed a willingness to do its share. In a press release, dated May 29, 2009, Governor Markel and agency heads affirmed their commitment to accelerate cleanup of the Chesapeake Bay to achieve full implementation by 2025 and to increase government accountability. That said, we agree with the Environmental Protection Agency's (EPA) September 24, 2010, assessment of Delaware's draft Watershed Implementation Plan (WIP) and strongly encourage the state to address those identified deficiencies in their final plan.

Although Delaware represents only a small portion of the Bay watershed, it contains the headwaters of many eastern shore rivers and these areas have a relatively high impact on water quality in the Bay. Many of these rivers and streams are themselves impaired, so progress to restore the bay and its tributaries will also lead to improvements to Delaware's waterways. In fact, the state's integrated report suggests that TMDLs will be developed for many of these waterways by 2010.

(<http://www.wr.dnrec.delaware.gov/Information/OtherInfo/Documents/2008%20Combined%20Watershed%20Report.pdf>).

In addition, as indicated in Appendix F of Delaware's draft WIP, there are significant economic benefits associated with this region. Preliminary estimates indicate goods and services in the Delaware portion of the Chesapeake Bay watershed contribute over \$1 billion in annual economic activity, is directly/indirectly responsible for over 47,000 jobs, has an annual ecosystem value of natural goods and services of at least \$3.1 billion, and water supplies are worth at least \$50 million for treated drinking water and \$18 million for irrigation. Hence, protection and restoration of water quality in this area will serve to increase these economic benefits.

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water listings for many watershed states, including Delaware. (*American Littoral Society v. EPA*, No. 96-330 (D. DE)). On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, with the EPA Administrator, Carol Browner, the *Chesapeake 2000 Agreement* which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. In the fall of that same year, Governor Tom Carper of Delaware signed a formal agreement to work with the other

jurisdictions to “achieve the nutrient and sediment reduction targets...to achieve the goals of a clean Chesapeake Bay by 2010.”

In December 2003, the EPA, Delaware and the other Bay jurisdictions agreed to the nitrogen, phosphorus and sediment allocations that became the basis for “tributary strategies,” designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. The failure to achieve that goal triggered the need to develop the Bay TMDL – a process in which Delaware has been a full and cooperative participant.

Consistent with EPA’s letters to the Principals’ Staff Committee of September 11, 2008, November 4, 2009, and April 2, 2010, we strongly encourage the state to provide the necessary details in their WIP for how they will achieve the necessary reductions, particularly from agriculture, which contributes the vast majority of Delaware’s sediment, phosphorus and nitrogen loads to the Bay. The recent draft report by the U.S. Department of Agriculture (USDA) highlights that although progress has been made on reducing sediment, nutrient, and pesticide losses from farm fields through conservation practice implementation in the Chesapeake Bay region, a significant amount of conservation treatment remains to be done to reduce nonpoint agricultural sources of pollution. (USDA October 2010. Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region) Specifically, the report indicates that significant improvement is still needed in nutrient management (proper rate, form, timing, and method of application) throughout the region. About 81 percent of the cultivated cropland acres require additional nutrient management to reduce the loss of nitrogen or phosphorus from fields. The most critical conservation concern identified in the report is loss of nitrogen through subsurface loss pathways, most of which eventually contribute to surface water loads. These conclusions affirm EPA’s recommendations that Delaware should consider revising their nutrient management plan (NMP) regulations and identify the resources necessary to increase their NMP and concentrated animal feeding operation inspection programs to ensure compliance with state regulations. *See also* Water Quality in the Delmarva Peninsula, 1999-2001, USFWS Circular 1228.

We also encourage the state to improve its WIP with respect to addressing loads from new septic systems. According to the draft WIP, loads from this source are expected to increase; however, there are no specifics about how these loads will be tracked and offset. We also concur with EPA’s comments regarding the need for more specifics about how reductions from existing urban areas will be achieved.

We sincerely hope that the final WIP submitted to EPA achieves the TMDL allocations for nitrogen, phosphorus, and sediment and provides sufficient “reasonable assurance” so as to avoid the need for EPA to invoke the “backstop” provisions.

Sincerely,



Beth L. McGee, Ph.D.
Senior Water Quality Scientist

Attachment

CBF Letter on Maryland WIP



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

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WILLIAM W. WARNER

November 8, 2010

Mr. John Griffin, Secretary
 Maryland Department of Natural Resources
 580 Taylor Ave.
 Annapolis, MD 21401

Mr. Richard Hall, Secretary
 Maryland Department of Planning
 301 West Preston St., Suite 1101
 Baltimore, MD 21201

Mr. Earl Hance, Secretary
 Maryland Department of Agriculture
 50 Harry S. Truman Pkwy.
 Annapolis, MD 21401

Ms. Shari Wilson, Secretary
 Maryland Department of the Environ
 1800 Washington Blvd.
 Baltimore, MD 21230

Dear Secretaries Griffin, Hall, Hance, and Wilson:

In August 2010, the Chesapeake Bay Foundation (CBF) submitted a letter with recommended actions to be included in Maryland's Watershed Implementation Plan. The overarching premise of each of our recommendations was to challenge Maryland beyond the status quo, as a WIP that contains largely the same practices and approaches as previous plans will not result in water quality improvements.

While CBF congratulates Maryland for outlining a suite of actions that, if fully implemented, could meet statewide allocation targets for nutrients and sediment, we remain concerned that Maryland's draft WIP does not discuss meaningful changes to current programs and funding mechanisms that would actually result in achievement of the targeted reductions. In short, the WIP does not provide reasonable assurance that it will achieve pollution requirements and improve water quality throughout the state of Maryland.

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements to address the failure of the Bay jurisdictions to meet the Clean Water Act (CWA) requirements for identifying all impaired waters within their respective boundaries and developing plans for those waters. In 1998, Maryland entered into a memorandum of understanding with the Environmental Protection Agency (EPA) that required Maryland to complete listings of impaired waters and develop TMDLs for those waters within 10 years. The 1998 Memorandum of Understanding between the State of Maryland and the U.S. Environmental Protection Agency. Pursuant to that agreement, EPA would complete the listings and TMDL development if Maryland did not.

On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to various decrees and agreements by signing, with then EPA Administrator Carol M. Browner, the

Chesapeake 2000 agreement which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010.

In December 2003, EPA, Maryland, and the other Bay jurisdictions agreed to the nitrogen, phosphorus and sediment allocations that became the basis for “tributary strategies,” designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. Maryland completed its Tributary Strategy in 2004 and an implementation plan in 2007.¹ The failure to achieve that goal triggered the need to develop the Bay TMDL – a process in which Maryland has been a full and cooperative participant.

Consistent with EPA’s letters to the Principals’ Staff Committee of September 11, 2008, November 4, 2009, and April 2, 2010, we strongly encourage the state to provide the necessary details in their WIP for how they will achieve the necessary reductions. EPA’s assessment of Maryland’s WIP shortcomings is correct in noting the lack of specifics on necessary changes to existing programs; unbalanced focus on point source reductions to meet 2017 reduction targets; and the need for “enforceable or otherwise binding commitments” to achieve agricultural and stormwater reductions. Attached hereto and incorporated herein by reference are EPA’s assessments.

We have provided “CBF’s Detailed Comments on Maryland’s Draft WIP,” dated November 8, 2010, as an attachment hereto. It is incorporated herein by reference. Without the bold actions enumerated in these Comments, Maryland will fail to provide reasonable assurance, will not meet its current Milestones, and will not make significant progress toward TMDL implementation.

In submitting these comments, we incorporate herein by reference the comments of the Choose Clean Water Coalition; those of Donald Boesch, *et al.*; and those of CBF, all of which were sent to Administrator Jackson in reference to Docket no. EPA-R03-OW-2010-0736.

We look forward to continuing to work with you to ensure Maryland meets its pollution reduction requirements.

Sincerely,



Kim Coble
MD Executive Director

Jenn Aiosa
MD Senior Scientist

cc: Jason Dubow, MDP
Beth Horsey, MDA
Catherine Shanks, DNR
Tom Thornton, MDE
Matt Gallagher, Office of the Governor

¹ Maryland’s Chesapeake Bay Tributary Strategy Statewide Implementation Plan.
http://dnr.maryland.gov/bay/tribstrat/implementation_plan.html

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CBF Detailed Comments on Maryland's Draft WIP

Page 1

1. THE WIP NEEDS ENFORCEABLE AND BINDING COMMITMENTS TO INCREASE WATER QUALITY PROTECTIONS

The Draft Phase I WIP contains few commitments that would provide “reasonable assurances” that pollution reduction targets will be met. While the WIP contains options to expand agricultural best practice implementation, increase stormwater retrofit requirements, increase advanced septic system technologies, and increase natural filters on private and public lands, there are no commitments for programs, developing new regulations, generating dedicated revenues, or creating other requirements that would ensure these actions are actually taken. Such options need to be backed with enforceable or binding commitments because voluntary implementation alone will not be sufficient to meet the extent of actions required to meet Maryland’s nutrient pollution reduction goals under the Bay Total Maximum Load (TMDL) currently proposed by EPA.

It is imperative that Maryland include concrete commitments regarding the programmatic, statutory, and regulatory changes – including commitments to necessary funding – that will be necessary to provide “reasonable assurances” for the federal EPA, but can give stakeholders in Maryland the confidence that sectors are being required to increase their actions in measurable and accountable ways. In order to substantially increase implementation of outlined activities, the State and Local governments, private individuals, and others in the private sector will have to increase their resources targeted to pollution reduction. Below are several opportunities where reasonable assurances can be achieved through regulatory, programmatic changes that are enforceable or otherwise binding commitments.

Increase the Bay Restoration Fund to Ensure ALL Major Wastewater Plants are Upgraded (

Maryland’s Bay Restoration Fund (BRF) has been a model of success by creating a dedicated fund for pollution reductions. Since its creation in 2004, the modest fee on wastewater treatment and septic users has provided significant funding to upgrade the state’s largest wastewater treatment facilities as well as fund septic system upgrades and nonpoint pollution control with cover crops. Unfortunately, initial cost projections have been exceeded as wastewater treatment facilities go through engineering, design, and construction. EPA has estimated that the BRF will begin experiencing a structural deficit as early as 2012, short by more than \$100 Million².

The only solution that will ensure continuity in facility upgrades – and ensure both essential pollution reductions and compliance with the existing upgrade schedule – is to increase the BRF fee. Increasing the current monthly fee from \$2.50 per Equivalent Dwelling Unit (EDU) to \$5.00 per EDU will provide the necessary revenues to complete the task of upgrading all 67 major treatment facilities to Enhanced Nutrient Removal (ENR) technology while still meeting the existing upgrade schedule. Since the Draft WIP relies heavily on source reductions to meet its 2017 nutrient reductions, it is incumbent on the state to ensure that the necessary funding will be in place to provide reasonable assurance of achievement of these reductions.

² <http://www.mde.maryland.gov/assets/document/BRF-2010LegislativeUpdate-Draft.pdf>

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Stipulate Specific Performance Standards for Urban Stormwater Retrofits

Maryland's WIP lacks sufficient details regarding performance of stormwater retrofits and "restoration" activities in urban areas. Such retrofits and restoration of urban lands is the cornerstone of Maryland's WIP to reduce loads from existing development, yet there is no clear indication of what actions must be taken to "count" toward these load reduction goals. Maryland must better articulate the kinds of practices that would be acceptable to retrofit untreated urban and suburban lands, and ensure consistency with existing regulations that require Environmental Site Design (ESD) and lower impact technologies and approaches to meeting stormwater treatment requirements. For example, urban retrofits should focus on the installation of decentralized practices that maximize infiltration, filtration, evapotranspiration, or reuse as treatment methodologies, and must strive to treat at least the water quality volume from the contributing area.

Furthermore, Maryland must ensure that all retrofits, whether as part of the MS4 permits to meet load reduction requirements for the TMDL, or required under the Stormwater Management Act as a condition of redevelopment, be adequately designed, installed, inspected and maintained. The state needs to describe how they intend to track and enforce these requirements to meet the 2007 law and the MS4 provisions.

Require the Implementation of Local Stormwater Infrastructure Revenue Streams

The Draft WIP correctly identifies existing, unmanaged stormwater as a key target for retrofit in order to reduce nutrient and sediment pollution from the developed sector. The State has laid out three possible retrofit requirements for inclusion in the Phase I MS4 permits as they come up for revisions and modification: 30%, 40%, or 50%, and has asked for specific feedback. CBF supports inclusion of the 30% retrofit requirement – requiring MS4 jurisdictions to retrofit 30% of their currently untreated area during the permit term – consistent with the current Montgomery County MS4 permit. Achieving this level of retrofit within the five year permit term is an ambitious target. However, aggressive retrofits in our urban environments are necessary to restore stream health and reduce nutrient and sediment loads from developed areas.

A primary obstacle that the state must help to overcome is the lack of sufficient dedicated revenues to specifically address the expensive needs associated with stormwater management and retrofits within existing urbanized areas. Most counties currently allocate minimal resources to meet basic stormwater program functions. Local jurisdictions need to develop and implement local stormwater infrastructure fees (based on the amount of impervious surfaces or similar mechanism) both to generate sufficient funds for infrastructure improvements and stormwater retrofits, as well as to fund ongoing inspections and maintenance of urban and suburban stormwater facilities. Much of the future TMDL implementation will fall on local governments; they therefore, must be prepared to pay for necessary upgrades, retrofits, and restoration work.

Unfortunately, current statutory authority which allows local governments to impose such fees has largely been unutilized. The State must require the creation of local infrastructure revenue streams. The time has come for the state to legislatively require local jurisdictions with stormwater responsibilities to create local stormwater infrastructure revenue streams through an impervious surface fee or similar assessment of a user fee. Such a state requirement would ensure all jurisdictions have resources to help meet stormwater management requirements, while ensuring modest parity among jurisdictions fearful of "going it alone." An additional "incentive" would be to directly tie State financial assistance - via grants, low interest loans, and technical assistance for stormwater infrastructure improvements, retrofits and related restoration work - to the establishment of a local stormwater revenue stream.

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Develop a Nutrient Trading Policy for MS4 Permittees

The cost to reduce nitrogen and phosphorus from stormwater systems through retrofits is by far the expensive among all sectors. Recent analysis by the World Resources Institute indicates that nutrient trading could save MS4s hundreds of millions of dollars per year.³ If MS4s could purchase nutrient credit portion of their waste load allocation, they could substantially reduce their compliance costs. The trading program must be predicated on the protection and maintenance of local water quality and be constrained to only those segments if receiving waters are impaired, in order for MS4 permittees to participate in Maryland's Phase II (non-point source) trading programs.

Improve Stormwater Management from Smaller Jurisdictions and Active Construction Sites

Because untreated urban and suburban stormwater must be addressed in order to reduce pollution in existing developed areas, the draft WIP must detail the efforts Maryland will pursue to expand retrofits and requirements in Phase II permits. Additionally, Maryland must expand the scope of the MS4 program to include smaller jurisdictions with populations of 5,000 – 10,000. Many of these communities lack stormwater management and may represent meaningful opportunities for restoration and retrofits. Adding requirements for Phase II permits to retrofit 40% of untreated impervious acres by 2020 should also be included in the WIP.

In addition to expanding stormwater treatment to even smaller areas of existing development, Maryland must also make significant improvements in their existing General Construction Permit in order to reduce pollution from active construction sites. General Permit requirements need to include clear rules for phased site grading, and much more rapid site stabilization than the current 14-day stabilization, as well as requirements for buffers on all active construction sites. In this regard, mandatory pollution prevention requirements would go a long way toward addressing a significant source of sediment and nutrients contributing to Maryland's impaired waterways.

Improve Nutrient Management Planning and Implementation

The recent draft report by the U.S. Department of Agriculture highlights that although progress has been made on reducing sediment, nutrient, and pesticide losses from farm fields through conservation practice implementation in the Chesapeake Bay region, a significant amount of conservation management remains to be done to reduce nonpoint agricultural sources of pollution⁴. Specifically, the report indicates that significant improvement is still needed in nutrient management (proper rate, form, timing, and method of application) throughout the region. About 81 percent of the cultivated cropland acres require additional nutrient management to reduce the loss of nitrogen or phosphorus from fields. The most critical conservation concern identified in the report is loss of nitrogen through subsurface pathways, most of which eventually contribute to sediment and nutrient loads. This highlights not only the importance of cover crops, but also the need for Maryland to revise its nutrient management plan (NMP) regulations to address the issues of rate, timing and method of application and to identify the resources necessary to ensure their implementation. Furthermore, we note there is a severe

³ World Resources Institute. 2010. How Nutrient Trading Could Help Restore the Chesapeake Bay. <http://www.wri.org/publication/how-nutrient-trading-could-help-restore-the-chesapeake-bay>

⁴ USDA October 2010. Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay

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assistance “bottleneck” for the development of comprehensive nutrient management plans for concentrated animal feeding operations. Maryland must devise a detailed strategy for achieving compliance and enforcement of these applicable state and federal regulations.

Require Cover Crops on Priority Acres to Achieve Annual Goal

Maryland is assuming substantial nitrogen reductions from the agricultural sector will come from planting cover crops on more than 300,000 acres each and every year. The Draft WIP outlines two scenarios for cover crop implementation – 355,000 or 500,000 acres annually – but includes no details of necessary programmatic or regulatory changes to achieve either. Without such details on enforceable or otherwise binding mechanisms, the draft WIP fails to provide the required reasonable assurance that the state can accomplish the outlined reductions from cover crops. In recent years, the Maryland Department of Agriculture (MDA) has increased per acre payment opportunities to incentivize early planting, planting of preferred grains, and cover crop planting after manure in order to maximize cover crop implementation⁵. However, this incentive-driven, voluntary program still struggles to increase participation to current 2-year Milestone levels of implementation (325,000 acres/year by 2011); therefore, the state needs to look beyond voluntary or purely incentive-driven programs.

Maryland must change its approach to implementing cover crops. Cover crops must be required on acres most at risk for nitrogen loss as a mechanism for raising rates of implementation and targeting limited cost-share dollars where the greatest environmental benefits can be gained. At a minimum, cover crops must be required for fields after corn and on acres that have received manure. These scenarios currently are eligible for bonus payments under the cover crop program because they represent the best opportunity for residual nitrogen uptake by a winter crop which would likely otherwise be lost to the environment. Roughly 470,000 acres of corn were planted in 2009⁶ suggesting such a strategy of requiring cover crops on targeted high-risk acres could achieve annual implementation goals. Maryland's Water Quality Improvement Act and its implementing nutrient management regulations could be amended to require cover crops under specific circumstances, as an element of sound nutrient management. Only by amending the state law and regulations will Maryland have an enforceable mechanism to ensure that nutrient reductions could be counted on. Cost-share should remain available to these acres to help defray costs, but if necessary, per acre payments should be reduced to a level that would allow the state to offer financial assistance to all high risk acres.

Require Riparian Buffers Statewide

Buffering waterways is one of the most important ways to reduce nitrogen pollution of Maryland's rivers and streams. Maryland's Tributary Strategies recognize this by collectively calling for more than 93,000 acres of forested and grassed buffers on farm land, as well as fencing more than 11,000 acres of stream to prevent livestock access, and subsequently allow vegetation to reestablish and protect the streams. Unfortunately, progress on Maryland's first Milestone goals for forested and grassed buffers does not reflect the importance of these practices; as of May 2010, the state had met only 8% of its forested buffer milestone (245 of 3,000 acres) and about 17% of its grassed buffer milestone (1,196 of 7,000 acres)⁷.

⁵ http://www.mda.state.md.us/resource_conservation/financial_assistance/cover_crop/index.php

⁶ http://www.nass.usda.gov/Statistics_by_State/Ag_Overview/AgOverview_MD.pdf

⁷ <http://www.baystat.maryland.gov/2yearplan.html>

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Maryland should require buffers on ALL streams statewide, both on farms and developed land, and share funding to buffer implementation where they currently do not exist. Buffers provide long-term efficient nutrient reduction and stretch the benefits of limited cost-share dollars beyond a single year. Furthermore, buffers provide myriad environmental benefits including habitat, stream temperature (forested buffers), nutrient removal (2-8 times the nitrogen removal) via in-stream processing (forests) and carbon sequestration.⁸

The state must maximize use of the Conservation Reserve Enhancement Program (CREP) and Maryland Agricultural Cost Share (MACS) Program to implement and maintain buffers on farm land, especially adjacent to impaired waterways and on highly erodible lands. An opportunity for achieving greater retention and restoration on developed lands would be upgrading the Forest Conservation Act (FCA) "no net loss" standard, by increasing mitigation requirements and targeting additional plantings to riparian areas. To achieve such a target, the FCA could be amended to allow a higher "credit" assignment to reforestation or aforestation of riparian areas than reforestation or aforestation that takes place away from streambeds. Fees-in-lieu collected through FCA mitigation should also be focused on replanting and riparian forest areas as well.

Require Phosphorus-Based Management that Protects Water Quality

It is widely recognized that current use of the P-Index in Maryland is not adequately protective of water quality, especially in areas of high animal concentration, notably the lower Eastern Shore. As currently utilized, Maryland's P-Site Index allows for additional phosphorus to be applied to P-saturated soils. Phosphorus nutrient management must protect water quality, be reasonably simple to understand and implement, and balance manure use with crop removal.

A top priority must be placed upon the current WIP recommendation to reevaluate and revise the current P-Index to incorporate the best available science and more appropriately identify the risk for phosphorus movement from cropland. Reevaluation of the threshold that currently triggers required use of the P-Index is parallel necessary action. In Maryland, use of soil fertility values of 150 or greater may result in phosphorus losses from soils with lower soil test phosphorus levels⁹. Maryland should also work with the other states to determine an appropriate schedule under which the region can transition phosphorus-based management to a more sustainable approach. Ultimately, the goal must be to balance manure applications with crop removal on all farms in the Bay watershed.

⁸ Sweeney, B.W., T.L. Bott, J.K. Jackson, L.A. Kaplan, J.D. Newbold, L.J. Standley, W.L. Hession, and R.J. Horwitz. 2004. Deforestation, stream narrowing, and loss of stream ecosystem services. *Proceedings of the National Academy of Sciences* 101:14137.

⁹ K. Staver, personal communication

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2. THE WIP MUST BETTER ACCOUNT FOR AND LIMIT NUTRIENT LOADS FROM GROWTH

First reduce, and then require offsets for ALL remaining incremental increases in pollution

The use of a separate "Future Allocation" for accommodating new growth is contrary to the entire TMDL and WIP goal of reducing and capping pollution. Future Allocation transfers the burden of pollution reduction to other sectors and pre-supposes success. A separate Future Allocation also places infill and Smart Growth at an artificial disadvantage. The concept of Future Allocation must not be included in the WIP. All urban sources, both existing and new, need to be classified in a single sector and be held accountable for the nutrient reductions needed in the watershed. Furthermore, the methods for tracking the impact of growth must be uniform across local jurisdictions and publicly accessible in a single location coordinated by the state.

In contrast, the inclusion of offsets, with forest as the baseline, for pollution loads associated with growth, is a positive element of the draft WIP. The draft WIP appropriately lays out a concept that differentiates between growth that occurs in higher density areas with low per capita load potential, versus growth that occurs in more remote, less dense areas where per capita pollution loads are higher, provided that high-per-capita loads are offset at a ratio of at least 2:1. Criteria for designating mid-per-capita areas, consistent with the criteria for designating Priority Funding Areas, are an additional necessary element. This model, combined with the 2007 Stormwater Management Act and implementing regulations which set different stormwater management standards for redevelopment versus green field development, will strengthen the state's foundation for smart growth.

However, the proposed policy is incomplete without concerted efforts to first prevent and minimize new pollution loads associated with growth, prior to considering and awarding offsets. Combined, new development and septic systems are projected to add 2.2 million pounds of nitrogen to Maryland's portion of the watershed by 2020 - a significant portion of Maryland's total projected "gap" in nutrient reductions. In this context, the WIP's use of offsets as the primary means to control the impacts of growth is insufficient for the following reasons:

- offsets place little responsibility on local government to modify future land use plans to benefit water quality;
- offsets are not expected to be widely available in the near term;
- over the long term, offsets may become more attractive than on-site minimization and treatment of pollution, to the detriment of nutrient reduction efficiency and local environmental quality; and
- contingencies are not delineated for situations where offsets are unavailable.

The WIP needs to limit the use of offsets by prioritizing prevention and on-site load reduction as the primary way to address proposed new loads due to growth. After minimizing new loads, on-site treatment should be instituted to the maximum extent practicable. Only after this sequence of avoidance and minimization is exhausted, should offsets be allowed to be used. In addition to this offset "sequencing", the actions outlined below (and in the prior section on buffers) should be taken to ensure that new loads from growth are efficiently and effectively controlled.

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Furthermore, Maryland must outline how offsets will be handled in the interim three years while it offset program. During this interim, Maryland must effectively manage offsets from new loads as growth in an enforceable manner.

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Curtail the Use of Septic Systems for Large New Development

There are more than 430,000 septic systems in Maryland, and new traditional systems are added each year. An estimated 7 percent (3.6 million pounds per year) of the total nitrogen load in Maryland comes from septic systems. New septic systems are, collectively, a substantial annual new source that is currently not offset or otherwise mitigated, and most are not even required to use Best Available Technology for nitrogen removal. Based on current growth trends, Maryland's Department of Planning (MDP) projects that 145,000 new septic systems will be added over the next 20 years, resulting in a 34-percent increase in nitrogen loads from septic systems in Maryland¹⁰.

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The State must commit to limiting new development on septic systems by legislatively prohibiting septic systems to serve new major subdivisions. Major subdivisions belong in designated growth areas where they can be served by centralized sewer. Any new major subdivisions to be built outside of central service areas must utilize centralized collection and treatment processes that improve nitrogen removal over traditional septic systems and include routine maintenance and operation by a trained, responsible person. A septic system should be sized to serve only the proposed project, and must be consistent with the local jurisdiction's approved master plan for water and sewerage. Maryland cannot continue to allow sprawl development on septic systems for a number of reasons, not the least of which is that it equates to an end-run around source caps on wastewater treatment plants.

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Cap Septics at 2010 Loads

Non-point source loads associated with a county's septic systems must be assigned an "allocation" cap based on the number of systems in service in 2010. County master plans for water and sewer service must describe how the county intends to maintain the allocation and operate a program to offset nitrogen loads in accordance with the state's guidance on trading and offsets. By tying this allocation to local water planning, local jurisdictions will have a meaningful tracking mechanism as well as flexibility for how offsets are implemented. By establishing this effective "cap" any new septic system installed would have the same nitrogen load, just as a new wastewater facility would have to.

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Require All New Septic Systems to Utilize Nitrogen-Reducing Technology

Traditional septic systems rely largely on technology that is more than 100 years old. When improvements are made to homes, modern building codes must be considered, and systems must often be "upgraded" to meet current standards.

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¹⁰ <http://planning.maryland.gov/OurWork/smartGrowthIndicators.shtml>

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with more advanced standards for health and safety. Why, then, should Maryland continue to allow the routine replacement of failed septic systems with antiquated technology that pollutes surface and groundwater, and threatens public and environmental health? Maryland's WIP must include new requirements that any new on-site system and all replacement septic systems must be required to include nitrogen removal technology.

3. REVISIT AGRICULTURAL OPTIONS FOR NITROGEN REDUCTIONS

Focus "Gap Closers" on Practices with Known Nitrogen-Removal Efficiencies

The Draft WIP suggests that even the "accelerated" Milestone rates of implementation of agricultural practices will result in a "source sector gap" of 1.4 million pounds of nitrogen, if outlined levels of implementation of cover crops and other practices are achieved annually. The draft WIP outlines a series of options that might be utilized to address this sizeable sector gap. Unfortunately, many of these options are largely untested and have no verified nitrogen removal efficiency data associated with them. Such a large pollution reduction gap would be better addressed through more aggressive implementation of practices with reliable nitrogen reduction efficiencies. Furthermore, the draft WIP lacks sufficient details on the gap-filling strategies, so there is no way to know if, as outlined, the strategies will meaningfully reduce nutrient pollution loads from the agricultural sector.

Generally speaking, the agricultural sector strategy needs to increase rates of implementation for most of the practices currently listed at, or slightly higher than, current 2-year milestone rates. It is precisely these practices – including fencing cattle from streams, planting buffers, building poultry litter storage facilities, and employing conservation tillage – that can be easily incorporated into current funding programs and farm operations. These practices meet multiple objectives on most operations, and have been undertaken routinely within Maryland, with known costs and outcomes.

Increasing rates of implementation will not be without challenges, most notably in technical and financial assistance. The State should address these problems now by identifying and securing additional revenues and determining how to meet the statutory requirement to fully fund Soil Conservation Districts with technical personnel. One idea to provide additional financial resources would be to model a transferrable tax credit program in Maryland after Pennsylvania's successful Resource Enhancement and Protection (REAP) Program, which can incentivize private sector investments in agricultural conservation.

In order to accelerate implementation of some of these practices, Maryland must also look to the use of flexible standards. For example, it was clearly stated at the statewide WIP public meetings that farmers generally want to fence cattle from waterways because of the dual benefits of improved stream and livestock health. In many cases, minimal fencing is necessary to complete the job (2-strand wire versus USDA-recommended 5-strand fencing) and more modest fencing can be more attractive to farmers who rent the land they farm. CBF routinely works with farmers in central Maryland to implement such fencing projects, but these exclusions currently do not "count" toward nutrient reductions in the Bay model. Use of more flexible standards, only where appropriate, can be a cost-effective way of stretching limited cost-share funding and increasing implementation rates simultaneously.

November 8, 2010

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Use of Innovation

Innovative approaches to meeting the challenges of nutrient reduction in our agricultural sector are ingredient of a successful WIP. One such innovative approach that is not currently included in the the conversion of marginal crop land to permanent vegetative cover. The benefits of permanent vegetation cover, including hay, pasture, and specialty crops such as orchard trees, vineyards, or perennial grain energy production, can not be over-stated. Covers such as hay or pasture grasses, require much lower inputs, and in the case of hay, could be highly valuable to Maryland's growing equine industry.

This kind of permanent cover can be undertaken as a whole-farm transition to a different farm system opportunity for diversification on existing grain land, with hay or grasses grown on marginal land. supports the use of funds from the current cover crop program to support these kinds of transitions cover, as a related practice that has longer-term benefits for a farm.

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Attachment

CBF Letter on Virginia WIP



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Saving a National Treasure

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AILEEN BOWDOIN TRAIN

November 5, 2010

VIA E-MAIL

Commonwealth of Virginia
vabaytmdl@dcr.virginia.gov

Subject: Comments on *Chesapeake Bay TMDL Phase 1 Watershed Implementation Plan* prepared by the Commonwealth of Virg

Dear Sir/Madam:

On behalf of the Chesapeake Bay Foundation's (CBF's) 89,000 members in Virginia, please accept this letter as formal comment on the *Chesapeake Bay TMDL Phase 1 Watershed Implementation Plan* (draft WIP) prepared by the Commonwealth of Virginia and submitted to the U.S. Environmental Protection Agency (EPA) on September 3, 2010.¹ We very much appreciate the dedication of the many state agency staff that contributed to the draft WIP. We further thank the Commonwealth for the opportunity to comment upon this critical work.

Unfortunately, CBF finds that the draft WIP falls far short of providing assurance that actions will be taken by 2025 to achieve the reductions in nitrogen (TN), phosphorus (TP), and sediment pollution called for in the Chesapeake Bay Total Maximum Daily Load (Bay TMDL).² Promising ideas in the draft are overshadowed by the failure to attain the TMDL allocations in the James River basin and a critical lack of "reasonable assurance," that is, the details, commitments, and accountability needed to cut pollution, particularly non-point source (NPS) pollution. Considering the long history of the Bay clean-up and the constructive exchange of ideas within the Stakeholder Advisory Group (SAG) over the last year, and the many ambitious new concepts for delivering pollution reductions put forward in earlier versions of the WIP, the draft submitted to EPA is a significant disappointment.

As has been voiced by EPA and diverse state interests since the release of the draft WIP, CBF concurs that a solution by Virginia for Virginia is best. There is no question that this approach allows a deeper chest of tools and more flexibility in how to achieve the Bay TMDL than is afforded outside entities.

¹ *Chesapeake Bay TMDL Phase 1 Watershed Implementation Plan. Revision of the Chesapeake Bay Nutrient and Sediment Tributary Strategy. Public Review Draft. Commonwealth of Virginia, September 2010. Hereinafter "draft WIP."*

² *Draft Chesapeake Bay Total Maximum Daily Load. U.S. Environmental Protection Agency, September 24, 2010.*

With that belief in mind, herein, CBF provides specific comments to facilitate improvements to the draft WIP. In **Section I** we describe requirements under the law for Virginia's creation of a WIP that meets TMDL allocations with a high level of reasonable assurance and in **Section II** we demonstrate that the draft WIP does not approach providing reasonable assurance. **Section III** provides a summary of our recommended revisions to the draft WIP, and the attached **Exhibit 1** provides a detailed evaluation of the draft WIP and specific recommendations on how to create a final WIP that meets TMDL goals. Our recommendations are focused on reducing TN and TP pollution, so the terms "nutrient pollution" and "pollution" used hereinafter refer to these pollutants. In **Section IV** we offer a revised set of pollution allocations, which only deviate from the pollution allocations envisioned in the Commonwealth's August 24, 2010 "discussion draft" by requiring additional reductions from the wastewater source sector.³ **Section V** highlights the economic benefits of clean water, and the attached **Exhibit 2** extensively documents this fact. And lastly, **Section VI** closes the comments by discussing the economic benefits of clean water and the current state of affairs that justify a new approach to cleaning the Bay and its rivers.

We believe a final WIP that incorporates our recommendations can achieve our revised pollution allocations, and will be achievable, accountable, and give Virginia assurance that the Bay TMDL will be met. Submittal of such a final WIP by the Commonwealth will allow the McDonnell Administration to do something seven previous Governors have failed to do: once and for all to meet their obligation under the Virginia Constitution, state as well as federal law, and multiple agreements to protect the Bay and its rivers from pollution. CBF has, and will continue, to hold EPA to this same high standard when evaluating the draft Bay TMDL. We hereby incorporate by reference the written comments of CBF, the Choose Clean Water Coalition, and Rebecca Hanmer on the Bay TMDL submitted to EPA under Docket no. EPA-R03-OW-2010-0736.

In the event that the Administration does not take this last opportunity seriously, and again submits a WIP that fails to provide reasonable assurance, we firmly stand behind EPA's proposal to approve a "backstop" TMDL, use its "residual authority" to establish more stringent requirements for NPS, and take other appropriate actions to ensure the Bay is finally put on a more certain path toward restoration. It is EPA's duty under the Clean Water Act to protect our waters if Virginia fails to do so.

The Commonwealth and the other six Bay jurisdictions have made important progress reducing pollution. However, the evidence is clear that our mostly voluntary efforts to cut the pollution running off the lands that house and feed our growing population have not, and will not, finish the job. Our recommendations are specifically intended to help solve the growing problem of NPS pollution.

³Commonwealth of Virginia. 2010. *Virginia's Watershed Implementation Plan: Background, Approach and Summary of Proposed Actions Discussion Draft*, 8/24/2010. This document was distributed at the last SAG meeting before release of the draft WIP. It proposed levels of treatment and corresponding actions for the main source sectors. The levels of treatment corresponded to a scoping spreadsheet distributed to the SAG that described for TN and TP current reduction progress, allocations consistent with an "everything, everywhere, by everyone" or E3 level of treatment, and allocations consistent with two lesser treatment levels, termed Level 2 and Level 3.

CBF Comments on the Draft Chesapeake Bay TMDL Phase 1 WIP
November 5, 2010
Page 3

We now have before us a once-in-a-lifetime opportunity to move beyond 30 years of obligations and vital, yet partial, progress to once and for all protect the Bay and its rivers, in turn, safeguard the hundreds of thousands of jobs and tens of billions in annual economic activity these waters increasingly struggle to sustain. Our efforts today will prevent another generation of the Bay region's children from inheriting our mess.

I. The Clean Water Act and Virginia Law Require that Virginia Adopt an Adequate Water Implementation Plan that Meets Bay TMDL Allocations and Provides Reasonable Assurances that Necessary Pollution Reductions Will be Achieved.

Virginia's responsibility to develop an adequate WIP that meets the Bay TMDL allocations and provides reasonable assurances of required pollution reductions is founded, contrary to suggestions in the draft WIP,⁴ on the firm requirements of both state and federal law.

A. Under the Clean Water Act, TMDLs Must Be Established at Levels Meeting Water Quality Standards and Be Adequately Implemented.

The Clean Water Act (CWA)⁵ and implementing regulations provide the basis on which the draft WIP must be evaluated. Enacted in 1972 to compel the restoration of the nation's waters, the CWA requires the states to establish water quality standards for the waters within their boundaries and to take the necessary actions to ensure that the waters meet those standards, thereby achieving CWA's goals. If a state does not promulgate water quality standards or falls short of CWA requirements in doing so, EPA will set the standards for the state.⁷ The CWA prescribes the use of technology-based effluent limitations for most point source discharges; if those measures do not achieve water quality standards, CWA requires the use of water quality based controls under Section 303(d).⁹

The draft WIP forms part of the CWA's § 303(d) TMDL program, which requires identification and listing of all impaired water bodies within a state's borders. For each impaired water body, Section 303 and implementing regulations require the state to establish a TMDL for specified pollutants.¹⁰ A TMDL is the maximum amount of a pollutant—from background and nonpoint sources, together with a margin of safety—that the water body can receive and still attain water quality standards.¹¹ These requirements apply to both point and nonpoint sources.

⁴ See, e.g., draft WIP, at i (noting Governor McDonnell's stated concerns about the "legality," "compressed timeline," and other aspects of the draft Bay TMDL).

⁵ 33 U.S.C. §§ 1251, *et seq.*

⁶ 33 U.S.C. §§ 1251(a)(2) and 1313(c)(1) (CWA goal is to "restore and maintain the chemical, physical and biological integrity of the Nation's waters").

⁷ 33 U.S.C. §§ 1303(b), (c)(3)-(4).

⁸ 33 U.S.C. § 1311(b)(1).

⁹ 33 U.S.C. § 1313(d).

¹⁰ 33 U.S.C. § 1313(d)(1)(C). Development of a TMDL is mandatory when triggered by the CWA. See *National Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on Congress's use of the word "shall" in Section 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1153 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs).

¹¹ See 33 U.S.C. § 1313(d)(1)(C); 40 CFR §§ 30.2(e)-(i).

pollution.¹² When triggered by CWA requirements, the states and EPA are required to establish a TMDL, as courts have recognized.¹³

Once a TMDL is established and approved by EPA, the state must adequately implement it to ensure water quality goals are attained. Thus, CWA § 303(e)(1) requires each state to have a continuing planning process that results in implementation plans for all navigable waters within state boundaries, which include effluent limitations and compliance schedules as required, §303(d) TMDLs for pollutants, and “adequate implementation, including schedules of compliance, for revised or new water quality standards.”¹⁴ Resorting to a TMDL is the CWA’s “backup” strategy for achieving water quality standards; it is invoked when point source permits and best management practices (BMPs) for NPS have not succeeded.¹⁵ Accordingly, EPA may only approve a state-submitted implementation plan that provides assurances it will succeed in “implement[ing] applicable water quality standards.”¹⁶

What constitutes reasonable assurances will vary depending on the water body and the pollution sources at issue.¹⁷ In the case of TMDLs for waters impaired only by point sources, National Pollutant Discharge Elimination System (NPDES) permitting may be sufficient to provide reasonable assurance that the TMDL’s waste load allocations (WLAs) will be achieved. For waters impaired by both point and nonpoint sources, a TMDL may not allocate WLAs based on an assumption that NPS load reductions will occur unless the TMDL provides reasonable assurances that NPS control measures will achieve expected load reductions.¹⁸ The bottom line is clear, however: to carry out CWA’s command to ensure water quality standards are attained, EPA must be able to determine that a plan’s claimed load allocations are not based on excessively optimistic hopes concerning the amount of NPS pollutant reductions that will occur. “If the reductions embodied in load allocations are not fully achieved because of a failure to fully implement needed NPS controls, the collective reductions from point and NPS will not result in attainment of the water quality standards.”¹⁹

B. Under Virginia Law, TMDLs Must Be Established at Levels Meeting Water Quality Standards and Be Adequately Implemented.

¹² *E.g., Pronsolino v. Natri*, 291 F. 3d 1123, 1135-1140 (9th Cir. 2002).

¹³ *E.g., Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y.1995) (EPA must establish TMDLs based on Congress’s use of the word “shall” in CWA § 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs); *Sierra Club v. Hankinson*, 939 F. Supp. 872, 873 (N.D. Ga. 1996) (To attain CWA goals, EPA must ensure that TMDLs are implemented).

¹⁴ See 33 U.S.C. §§ 1313(e)(1) and (c)(3)(C),(F); 40 C.F.R. Part 130.6(b),(c) (TMDLs must be included in Water Quality Management Plans used to direct implementation).

¹⁵ See 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b)(1).

¹⁶ See 33 U.S.C. § 1313(d)(2).

¹⁷ See *Guidelines for Water Quality-Based Decisions: The TMDL Process* (1991 EPA Office of Water Regulations and Standards) (“1991 Guidance”).

¹⁸ *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992* (EPA 2002), available at <http://www.epa.gov/owow/tmdl/guidance/final52002.html> (“2002 Guidance”).

¹⁹ See Correspondence, dated November 9, 2009, from William C. Early, Acting EPA Regional Administrator, to L. Preston Bryant, Virginia Secretary of Natural Resources, at 5.

The requirement that Virginia adopt an adequate plan to implement a TMDL for impaired waters has been part of the law of the Commonwealth for many years. In fact, even before the enactment of the CWA, the Commonwealth was committed to both protecting and *restoring* waters. The Constitution of Virginia proclaims, “To the end that the people have . . . pure waters it shall be the policy of the Commonwealth . . . to protect its . . . waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of Commonwealth.”²⁰ In 1950, the General Assembly first enacted Virginia’s State Water Control Law (SWCL),²¹ which reaffirms the Commonwealth’s obligation to protect high-quality state waters and to restore “all other state waters to such condition of quality that any such water permit all reasonable public uses and will support the propagation and growth of all aquatic life including game fish, which might reasonably be expected to inhabit them.”²²

Building on these foundational laws, Virginia adopted the requirements of the CWA’s §303(d) program, along with other measures to protect water quality.²³ Thus, the General Assembly mandated that the State Water Control Board (Board) prepare CWA § 303(d) reports that identify state waters impaired by nutrients, sediments, and other pollutants and determine the causes of impairments among point and nonpoint sources.²⁴ The Board is specifically required to “develop and implement a plan to achieve fully supporting status” —defined as “meeting the fishable and swimmable goals of the CWA” —for impaired waters.²⁵ The implementation plans must state the date of expected completion, measurable goals, necessary corrective actions, the associated benefits, and environmental impacts of addressing impairment, and expeditious development and implementation of total maximum daily loads.²⁶

These statutes leave no doubt that the CWA governs Virginia’s implementation plan, including the draft WIP at issue. Indeed, it commands the Board to “develop and implement a plan pursuant to a schedule total maximum daily loads of pollutants that may enter the water for impaired water body *as required by the Clean Water Act.*”²⁷ Accordingly, the adequacy of the draft WIP at issue here must be measured against the CWA requirements, including the

²⁰ Va. Const., art. XI, sec. 1.

²¹ Va. Code §§ 62.1-44.2, *et seq.*

²² Va. Code § 62.1-44.2.

²³ Other Virginia water quality statutes include Va. Code §§ 62.1-44.19:12 (Chesapeake Bay Watershed Nutrient Credit Exchange Program,) and 2.2-218 (requiring Secretary of Natural Resources to “coordinate the development of tributary plans” that address nutrients and sediments entering Chesapeake Bay).

²⁴ Va. Code §§ 62.1-44.19:5.C and 62.1-44.19:5.D.

²⁵ Va. Code § 62.1-44.19:7.A.

²⁶ *Id.*

²⁷ Va. Code § 62.1-44.19:8 (emphasis added). The General Assembly also emphasized the importance of the plan by mandating that the Secretary of Natural Resources develop plans for cleanup of the impaired waters of the C&D Bay as designated by EPA, and further mandated that the plan be revised as needed to reflect strategies, timeframes, and milestones, measurable and attainable objectives, strategies to meet specific and attainable timetables under the plan, time frames or phasing to accomplish plan objectives and the expected date of completion, a clearly prioritized, and funded program of work within the plan for better point and nonpoint source cleanup, disbursement plan with list of specific projects, problem areas, risk mitigation strategies, descriptions of extent of impairment, coordination, assessments of alternative funding mechanisms, recommendations to funding committees for implementation. See VA Code § 62.1-44.117.

requirements of meeting the Bay TMDL's allocations and providing reasonable assurances of pollutant load reductions.

C. EPA Is Required by CWA §§ 303(d) and 117(g) to Issue the Bay TMDL and Proceed with the TMDL Process.

EPA is authorized to issue the Bay TMDL and proceed with the Bay TMDL process as a result of the Bay waters' § 303(d) listing, the failure of Virginia and other Bay states to prepare required TMDLs, and CWA § 117(g).

The long history of and incomplete progress in restoring the Bay are well documented. Over the course of the last 25 and more years, the Bay jurisdictions and the federal government have committed and re-committed themselves to the goal of restoring the waters of the Chesapeake Bay and tidal tributaries. *See, e.g.*, 1983 Chesapeake Bay Agreement (agreement by the governors of Maryland, Virginia, and Pennsylvania, the District of Columbia mayor, the chairman of the Chesapeake Bay Commission, and the EPA Administrator to form the Chesapeake Bay Executive Council to implement plans for protecting Bay water quality); 1987 Chesapeake Bay Agreement (agreement by same parties to a 40 percent reduction in point source nutrient pollution and development of a Bay-wide implementation strategy by 2000) and 1991 reevaluation (agreement requiring quantification of the original reduction goals, including "tributary nutrient load allocation"); 1992 amendment of 1987 Agreement (agreement requiring implementation of tributary-specific strategies to meet Bay water quality goals).

The *Chesapeake 2000* agreement commenced a new stage in Bay restoration. The region's jurisdictions, together with the EPA Administrator and the Chesapeake Bay Commission chairman, agreed to implement revised tributary strategies by 2002 and to reduce nutrient and sediment pollution sufficiently to remove the Bay and tidal tributaries from the § 303(d) list by 2010. In 2003, EPA and its watershed partners established nutrient and sediment cap loads on the basis of Bay water quality model projections and allocated those loads among the major river basins as implemented by the tributary strategies. In and around 2004, Virginia, Maryland, and Pennsylvania all passed legislation to create the Chesapeake Bay Commission to assist state legislatures in responding to problems relating to the Bay.²⁸ In 2004, as well, Virginia and the other six Bay jurisdictions developed what became known as the Chesapeake Bay Tributary Strategies which outlined river basin-specific implementation activities to reduce nutrients and sediment from point and NPS. The tributary strategies led to WLAs and LAs for the river basins that were set at levels very close to those recently stated in the Bay TMDL. In 2005, Virginia, Maryland, and Pennsylvania completed their Tributary Strategies for each major river basin.²⁹ In 2007, EPA and the Bay jurisdictions reevaluated the tributary strategy nutrient and sediment cap loads and found that sufficient progress had not been made.

²⁸ Va. Code § 30-240, and seq.

²⁹ *Chesapeake Bay Nutrient and Sediment Tributary Strategies* (2005, Commonwealth of Virginia).

While each of these endeavors may have yielded some benefits, they did not lead to removal of the Bay and tidal tributaries from Maryland or Virginia's list of impaired water waters were included on Virginia's 1998 § 303(d) list, giving rise to the Commonwealth's obligation under the CWA obligation to prepare a TMDL for those waters. Virginia never such a TMDL. Instead, it requested that EPA do so³¹ in accordance with a schedule established by a consent decree resolving the *American Canoe Ass'n, et al. v. EPA* litigation.³² Propelled by the *American Canoe*, other consent decrees, memoranda of understanding, and settlement agreements,³³ EPA commenced the process of preparing the TMDL, pursuant to CWA §§ 303 and 303(d), and current case law. Section 117(g) directs the EPA Administrator in coordination with the Chesapeake Executive Council to "ensure that management plans are developed and implementation is begun by signatories to the Chesapeake Bay agreement, to achieve and maintain...the nutrient goals of the Chesapeake Bay Agreement for the quantity of nitrogen and phosphorus entering the Chesapeake Bay and its watershed..."³⁴ The Bay TMDL, which sets sediment and Bay nutrient target loadings, is such a management plan.

In view of the decisions of Virginia and other Bay states not to establish TMDLs for impaired Bay waters as required by CWA 303(d), the fact that the impaired Bay waters comprise a multi-state system impaired by pollutant loadings from seven jurisdictions, and that EPA, pursuant to the consensus direction of the Chesapeake Executive Council's Principals Staff Committee, EPA's decision to proceed with the TMDL is fully authorized.³⁵ Indeed, that decision embodies the directive in Executive Order 13508 that EPA "make full use of its authorities under the CWA."^{36, 37}

D. Virginia Is Required to Adopt an Adequate WIP that Meets the Bay TMDL Allocations and Provides Reasonable Assurances.

The requirement that Virginia adopt an adequate WIP that implements the Bay TMDL allocations, and includes reasonable assurances of point and nonpoint pollution reductions is a crucial aspect of the Bay TMDL and its "accountability framework

³⁰ In 1998, portions of the Chesapeake Bay and its tidal tributaries were identified as impaired for aquatic life due to exceedance of the numeric criteria for dissolved oxygen caused by nutrient and sediment pollutants on Virginia's 303(d) list. Other Bay and tidal tributary segments impaired by nutrients and sediment were identified on the lists of Maryland and the District of Columbia. See 74 FR 47792 (September 17, 2009).

³¹ See Chesapeake Bay Program Principals' Staff Committee, 2007.

³² E.g., Consent Decree, *American Canoe Ass'n, et al. v. EPA, et al.*, 54 F. Supp. 2d 621 (E.D. Va. 1999).

³³ See Settlement Agreement, dated May 10, 2005, *Fowler, et al. v. EPA*, Case No. 1:09-CV-0005-CKK (D.D.C.).

³⁴ 33 U.S.C. §1267 (g).

³⁵ See, e.g., *Scott v. City of Hammond*, 741 F. 2d 992 (7th Cir. 1984); *Dioxin/Organochlorine Center v. Clarke*, 3d 1517 (9th Cir. 1995); *American Canoe Ass'n. v. EPA*, 30 F. Supp. 2d 908 (E.D. Va. 1998).

³⁶ The draft WIP suggests that Virginia was not a party to the *American Canoe Association* case consent decree. However, as shown above, Virginia was independently obligated to prepare an adequate implementation plan. Moreover, while the draft WIP (somewhat contradictorily) suggests that the May 2011 consent decree should govern, the fact is, as shown above, Virginia had an independent obligation to adopt an implementation plan to restore the waters of the Bay and tidal tributaries.

³⁷ Executive Order 13508, 74 Fed. Reg. 23099 (May 15, 2009).

The WIP is intended to fulfill several crucial components of the Bay TMDL framework.³⁸ Virginia is expected to meet, but not exceed, the Bay TMDL's total nutrient and sediment allocations to the Commonwealth and its basins, and to sub-allocate those limits among point and nonpoint source sectors and individual permitted sources within the area draining to each of the applicable § 303(d) segments in Virginia. Further, the WIP is expected to identify specific actions and controls to be 60 percent implemented by 2017 and 100 percent implemented by 2025. Specifically, the WIP must provide information concerning interim and final nutrient and sediment target loads; current loading baselines and program capacity (including current legal, regulatory, programmatic, financial, staffing, and technical capacity to deliver the target loads); ways growth will be addressed; gaps in program capacity; Virginia's commitment and strategies for filling the gaps; tracking and reporting protocols; contingencies for slow or incomplete implementation; and detailed targets or schedules.³⁹ Note that the EPA WIP guidance sets a standard that is very similar to that required for TMDL implementation plans in Virginia law.^{40, 41}

The WIP, as a CWA implementation plan, is required to provide reasonable assurances that its allocations, including NPS allocations, will be achieved. The draft WIP asserts there is "some uncertainty" regarding the meaning of the term "reasonable assurance," and it suggests that the draft WIP's cursory references to "existing authority," "means of implementation," and to seeking "additional authority" will be sufficient to meet that requirement. EPA has issued a plethora of guidance on the subject that both confirms that reasonable assurances are the binding, enforceable, and/or incentive based tools that are included in an implementation plan to demonstrate that water quality goals will be attained and makes it clear that there is no "uncertainty" in this term that could justify any failure on Virginia's part to comply. For example, in 1991, EPA explained:

"Assurances may include the application or utilization of local ordinances, grant conditions, or other enforcement authorities. For example, it may be appropriate to provide that a permit may be reopened for a WLA which requires more stringent limits because attainment of nonpoint source load allocation was not demonstrated... State nonpoint source management programs may include, as appropriate, nonregulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects.⁴² The TMDL is established so that the statutorily-required water quality standards are achieved, reasonable assurances must be given that the nonpoint source load allocations will be achieved."⁴³

EPA's 1997 TMDL guidance, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)" further states, "It is now time to move towards the next stage of

³⁸ See EPA letter to Principals' Staff Committee, September 11, 2008.

³⁹ See Bay TMDL; see also correspondence from William C. Early, Acting EPA Regional Administrator to L. Preston Bryant, Virginia Secretary of Natural Resources (November 4, 2009); A Guide for EPA's Evaluation of Phase I Watershed Implementation Plans (April 2, 2010).

⁴⁰ See Va. Code §§ 62.1-44.19:5.C and D; 62.1-44.47.

⁴¹ Va. Code § 62.1-44-19:8.

⁴² See 1991 Guidance (emphasis added), at 6.

⁴³ *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992* (US EPA 1991a). www.epa.gov/owow/tmdl/guidance/final52002.html.

our strategy to achieve water quality standards—to make sure that TMDLs are established listed waters, and that the load allocations established by TMDLs are implemented by point and nonpoint sources alike.”⁴⁴ The guidance continued by explaining that “reasonable assurance that the nonpoint source load allocations established in TMDLs (for waters impaired solely or primarily by nonpoint sources) will in fact be achieved. These assurances may be non-regulatory, or incentive-based, consistent with applicable laws and programs.”⁴⁵ To the same effect is EPA’s 2002 document, “Guidelines for Reviewing TMDLs under Existing Regulations issued in 1991” which states for waters that are impaired by both point and nonpoint sources, “reasonable assurances that nonpoint source control measures will achieve expected load reductions [as required] in order for the TMDL to be approvable.”⁴⁶

EPA has repeatedly clarified its expectations concerning “reasonable assurances.” In a letter dated September 11, 2008, EPA provided the Chair of the Chesapeake Bay Program’s Principals’ Staff Committee with information about how EPA intends for the Bay TMDL to allocate nutrient and sediment loads and provide accountability for basin-wide reductions to meet water quality standards. This letter also included, in “Enclosure A,” detailed information concerning what the states were expected to provide by way of the reasonable assurance implementation framework for the Bay TMDL.

EPA offered a similar explanation in 2009, as the Bay TMDL process gathered momentum:⁴⁷

“When EPA establishes or approves a TMDL that allocates loads to both point and nonpoint sources, it determines whether there is a ‘reasonable assurance’ that the nonpoint source load allocation will, in fact, be achieved and water quality standards be attained. EPA does this to be sure that the load allocations are not based on too generous assumptions regarding the amount of nonpoint source pollutant reductions that will be achieved. If the reductions embodied in load allocations are not fully achieved because of a failure to fully implement needed nonpoint pollution controls, the collective reductions from point and nonpoint sources will not result in attainment of the water quality standards.”⁴⁸

Accordingly, the WIP will not be accepted by EPA as meeting applicable water quality standards unless the proposals it makes to reduce pollution loadings from nonpoint sources are clear and transparent, specific in their manner of effectuation, and enforceable through legislation, regulation, enforceable agreements, and appropriate and/or verifiable incentive programs. As shown below, Virginia’s current draft WIP falls far short of this requirement.

⁴⁴ *Id.*, at 1.

⁴⁵ *Id.*, at 6.

⁴⁶ “Guidelines for Reviewing TMDLs under Existing Regulations issued in 1991,” at 5.

⁴⁷ See EPA correspondence to then-Virginia Secretary of Natural Resources L. Preston Bryant, Jr. for the Chesapeake Bay Program’s Principals’ Staff Committee (November 4, 2009), at 15.

⁴⁸ *Id.*, at 5. See also U.S. E.P.A. (2002).

II. Virginia's Draft WIP Does Not Meet the Bay TMDL Allocations or Include Reasonable Assurances Showing that Necessary NPS Pollution Reductions Will Be Achieved.

The draft WIP does not conform to the requirements of the CWA. Most obviously, its nutrient allocations exceed the limits stated in the Bay TMDL for the James River that are necessary to meet the current chlorophyll *a* standard.

Equally important, the draft WIP does not provide reasonable assurances that the NPS reductions on which it relies to meet the Bay TMDL's allocations will be achieved. The draft WIP indicates the Commonwealth will "consider" or "explore" significantly expansion of a number of programs and practices that would be critical to achieving the reductions promised by the document, yet the document has not persuasively—or, in some cases, at all—explained how the expansions will be accomplished. Thus, the draft WIP relies to a significant degree on a barely-described proposal for a greatly enlarged nutrient credit exchange (NCE) as a way of meeting the nutrient and sediment reductions that are required by the TMDL. Indeed, the draft WIP repeatedly claims that the significant reductions promised for the urban runoff and on-site septic sectors "can be attained through expansion of the Virginia Nutrient Credit Exchange (NCE) program."⁴⁹ Although the program apparently would rely on nutrient credit purchases by the urban runoff and onsite septic system sectors,⁵⁰ nothing in the draft WIP describes what mechanism—whether regulatory or other—would create a demand for such credits. This issue is further discussed in **Section III**.

The WIP is strikingly devoid of necessary details concerning the how and when of possible changes in Virginia's regulatory and legislative frameworks that would be required to meet the reasonable assurances standard with respect to claimed nutrient reductions. A few of the many examples of this problem include the draft WIP's references to the onsite wastewater sector (noting the need to "consider revisions" to the Code of Virginia concerning new and replacement systems and requirements for additional nitrogen-reduction technologies)⁵¹ and the urban runoff sector (noting the need to "consider controls" on non-agricultural lawn and turf fertilizers).⁵² The lack of specificity is all the more disappointing given that the SAG members and agency staff put forward many thoughtful proposals to meet these gaps.

For other proposed reductions, the draft WIP asserts it will rely almost exclusively on voluntary measures, without enforcement or verification strategies, clear incentives, or regulatory drivers that could persuasively indicate the measures will be adopted and NPS reductions made. This strategy is especially striking in the context of the draft WIP's proposal to require 100 percent BMP implementation for urban runoff and onsite wastewater sectors and vastly increased agricultural BMP usage—yet these increases would be accomplished without mandates and without any detailed or plausible commitment on the part of the Commonwealth to increase

⁴⁹ See draft WIP, at 7, 9-10, 36-37.

⁵⁰ See draft WIP, at 4-6.

⁵¹ See draft WIP, at 12.

⁵² See draft WIP, at 13.

available funding.⁵³ As discussed throughout these comments, our position is that voluntary means will not suffice to meet the reasonable assurance requirement.

The deficiencies in the draft WIP cannot be excused by reference to any special provision of Virginia law concerning implementation costs, as the draft WIP seems to suggest. As shown above, Virginia law requires conformity to the Section 303(d) program. Moreover, the Code of Virginia section that prescribes implementation plans to address impaired waters provides no support for any idea that costs would justify delay in the development of an adequate implementation plan.

Further, the draft “target loads” provided by EPA in November 2009 and the draft TMDL allocations released in July 2010 do not differ significantly from those published in the tribal watershed strategies in 2005.⁵⁵ The Commonwealth has been in regular contact with EPA since 2005 and has participated actively in Chesapeake Bay Program committees (including the Principals Stakeholder Committee, Executive Committee, and Water Quality Implementation Team), was a party to the decision for EPA to pursue a Bay TMDL in 2007, and worked closely with EPA over the last several years to establish the draft WIP. Based on these facts we resolutely reject the WIP’s suggestion⁵⁶ that the allocations were unexpected or in any way impede the Commonwealth’s ability to develop a final WIP that meets the Bay TMDL.

As part of the draft Bay TMDL, EPA included its review of draft WIP-based applicable laws and regulations and the detailed EPA WIP guidance and concluded that the draft was “seriously deficient.”⁵⁷ The draft WIP’s numerous failures to provide reasonable assurance that nonpoint source reductions prevent EPA—and prevent the Commonwealth—from ascertaining whether the WIP will be able to meet water quality standards. The draft WIP cannot be applied in these circumstances. Thus, we concur with EPA’s conclusion that the draft WIP is “seriously deficient.” It neither meets the Bay TMDL’s allocations nor the requirements of CWA § 303 requiring reasonable assurances for NPS pollution reductions. CBF respectfully urges the Commonwealth to amend the draft WIP, in the manner detailed below, to address these deficiencies.

III. CBF Specific Recommendations for Improving the Draft WIP.

In the attached **Exhibit 1**, CBF provides a number of recommended revisions to the “Accounting for Growth,” “Strategy to Fill Gaps,” and “Contingencies” sections of the draft WIP to address its two principal shortcomings discussed in the previous section: (1) it does not provide sufficient pollution reductions to meet the TMDL allocations for TN and TP in the James River by 2017 or 2025, and (2) it lacks binding commitments to provide the program capacity needed to

⁵³ See draft WIP, at 60.

⁵⁴ Va. Code § 62.1-44.19:7.A.

⁵⁵ Letter from Shawn Garvin, EPA, Regional Administrator to Doug Domench, Virginia Secretary of Natural Resources. July 1, 2010.

⁵⁶ See draft WIP, at i (noting Governor McDonnell’s reference to “compressed timing”).

⁵⁷ Letter from William Early, EPA, Acting Regional Administrator to L. Preston Bryant, Virginia Secretary of Natural Resources. November 4, 2009; A Guide for EPA’s Evaluation of Phase I Watershed Implementation Plans. (October 2010); Bay TMDL, Section 8.

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give reasonable assurance that reductions in NPS pollution will be achieved and pollution from future growth will be prevented.

Recommendations to alleviate the key deficiencies in the draft WIP are provided for the four largest pollution source sectors: wastewater treatment plants (WWTPs), agriculture, urban runoff, and onsite wastewater systems (onsite systems). Comments and recommendations are not provided for the forest and resource extraction sectors. **Table 1** provides a brief summary of our recommendations described in more detail in **Exhibit 1**. Many of these recommendations were provided to the McDonnell Administration in a July 20, 2010 letter.⁵⁸ In addition, we include two brief additional sections that address the proposed expansion of the NCE and the use of two-year milestones to help meet TMDL goals. We also include some supplemental ideas for the WWTP sector if our specific recommendations prove untenable. Each recommendation includes (i) identification of the shortcomings in the draft WIP the revision will help address, (ii) a description of the revision, including the deadline for major actions, (iii) rough estimate of reductions in delivered TN and TP, if amendable to quantification without scenario builder or Bay modeling, and (iv) details of existing and new program capacity needed to implement the revision.

In narrowing down our list of recommendations, CBF focused on those that appeared realistic and achievable, are the most cost effective, attain better equity for citizens across river basins, and deliver additive benefits for local streams and communities. Some additional benefits could include nutrient reductions to streams that are scheduled to be subject to freshwater nutrient criteria beginning in 2013, recharge of groundwater sources, and assistance meeting other local water quality priorities (bacteria TMDLs, flood control, Municipal Separate Storm Sewer [MS4] permit requirements, etc.).⁵⁹

Lastly, these recommendations are not presented as the *only* means to improve the draft WIP. There are surely many other ways to improve the draft WIP, some of which were discussed during the SAG meetings. Thus, these recommendations and the projected pollution reductions are not absolute by any means. Our intent in providing them is to broadly illustrate the wide range of options available to the Commonwealth for developing a final WIP that meets the Bay TMDL.

Table 1: Summary of CBF Recommendations

Key: TN=Total Nitrogen; TP=Total Phosphorus; lbs=pounds; and BAT=best available technology.

Source Sector	CBF Recommended Revisions	New Program Capacity Needed	Rough Estimate of Additional Pollution Reductions (if Available)
Wastewater Treatment Plants	(1) Require phased upgrades of 11 large WWTPs in the Lower James River to 5.0 mg/L TN and 0.3 mg/L TP by 2025.	-Revise regulations -New funding	3,810,000 lbs TN 519,000 lbs TP
	(2) Retire 5 percent of "nutrient credits" currently tied to excess WWTP capacity in the James River Basin by 2011.	-Revise regulations	572,000 lbs TN 50,000 lbs TP

⁵⁸ Letter to Doug Domenech, Virginia Secretary of Natural Resources from Ann Jennings, Virginia Executive Director, CBF, on July 20, 2010.

⁵⁹ DEQ. 2010. *Nutrient Criteria Development Plan for the Commonwealth of Virginia*. March 24, 2004 (with 2010 Updates).

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Table 1: Summary of CBF Recommendations

Key: TN=Total Nitrogen; TP=Total Phosphorus; lbs=pounds; and BAT=best available technology.

Source Sector	CBF Recommended Revisions	New Program Capacity Needed	Rough Estimate of Additional Reductions Available
	(3) Require upgrades by the largest existing non-significant municipal WWTPs by 2025.	-Revise regulations -New funding	278,000 40,000
	(4) Achieve reuse of 2 percent of municipal WWTP flow watershed-wide by 2017.	-New law -Create incentives	175,000 18,000
	(5) Require offsets of new nutrient pollution from small municipal and industrial WWTPs by 2011.	-Revise law	Offsets and
Agriculture	(1) Develop financial incentives to support enhanced agricultural BMP implementation by 2011.	-Expand funding -New incentives	Helps meet allocation
	(2) Expand regulatory drivers for BMP implementation in existing programs through 2025.	-Revise regulations	
	(3) Require livestock stream exclusion by 2017 for herds with greater than 20 head.	-New law	
	(4) Create a safe harbor provision for Virginia farms by 2011.	-New law -New regulations	
	(5) Expand enforcement programs by 2011.	-New funding	
	(6) Develop alternatives to land application of manures.	-New funding	
	(7) Reduce ammonia emissions from animal feeding operations.	-New regulations	Offsets and
	(8) Require offsets of new nutrient pollution loads.	-Revise law	
Urban Runoff	(1) Create a new state program to fund the retrofit of existing developed lands by 2011.	-New laws -Revise permits -New funding	Helps meet allocation
	(2) Establish aggressive, yet feasible, retrofit mandates in municipal sewer system permits by 2012.	-Revise permits	Helps meet allocation
	(3) Restrict the sale and application of fertilizer to turfgrass statewide by 2012.	-New law	455,000 123,000
	(4) Pursue several improvements to the Virginia Erosion and Sediment Control Program.	-New regulations -Revise permits	Helps meet allocation
	(5) Initiate an intensive campaign on what individual citizens can do to reduce stormwater pollution.	-New funding	Helps meet allocation
	(6) Require the offset of nutrient pollution from new development by 2012.	-New law	Offsets and
	(7) Establish regulations and incentives that promote redevelopment and sound land use.	-New law -New Incentives	
Onsite Septic	(1) Require existing onsite systems in sensitive areas to install BAT for TN or offset equivalent load by 2025.	-New law -New funding	Helps meet allocation
	(2) Require installation of BAT for all new and replacement septic systems within 1000 feet of sensitive areas by 2012.	-New law -New funding	Offsets and
	(3) Improve enforcement of the existing CBPA septic pump out provisions and expand provisions Bay watershed-wide by 2025.	-New law	Helps meet allocation
	(4) Prohibit new onsite systems in sensitive areas by 2012.	-New law	Helps meet allocation
	(5) Establish a financial assistance program for system improvements by 2012.	- New funding	Helps meet allocation

Table 1: Summary of CBF Recommendations

Key: TN=Total Nitrogen; TP=Total Phosphorus; lbs=pounds; and BAT=best available technology.

Source Sector	CBF Recommended Revisions	New Program Capacity Needed	Rough Estimate of Additional Pollution Reductions (if Available)
	(6) Require offsets from all new systems, with in-lieu payment option by 2011.	-New law	Offsets new loads
Expanded Nutrient Credit Exchange	(1) Establish appropriate regulatory drivers for expanded trading program by 2012.	-New regulations	Helps reduce existing and offset new loads.
	(2) Create an in-lieu fee offset program for small dischargers by 2012.	-New law	
	(3) Improve local water quality protections.	-Revised law	
Two Year Milestones	(1) Include details of 2-year milestones in final WIP.	None	n/a

IV. Revised Pollution Allocations Consistent With CBF Recommendations.

CBF proposes a revised set of TN and TP allocations for 2017 and 2025. Our suggested allocations only differ from the allocations put forward by the August 24, 2010 discussion document by reducing allocations for the WWTP sector in accordance with our recommendations. We call for significant pollution reductions from the James River basin, with some further effort spread across the remaining river basins. We did not include any lower NPS allocations than those proposed in August 2010 because we believe implementation of the types of recommendations we put forward can meet these goals. Reductions in NPS pollution beyond these levels would require more aggressive actions. Since they were created without use of the Bay watershed model or scenario building tool, these projected reductions are not presented as absolute, and are presented to illustrate potential options. **Tables 2** provides the 2025 pollution allocations included in the draft WIP, those put forward in the August 24, 2010 discussion document, and our proposed revised allocations. **Table 3** shows the anticipated 2017 progress under these same three allocation schemes.

Our recommendations result in a reduction in allocations to WWTPs by **5,257,769** pounds per year TN and **652,685** pounds per year TP. These reductions help:

- Overcome the TN pollution reduction shortfall in meeting the 2017 goals and 2025 TMDL allocations, and nearly overcome the TP reduction shortfall in meeting the 2017 and 2025 goals.
- Allow the allocations for the agriculture, urban runoff, and onsite system sectors to be increased consistent with the levels of treatment envisioned in the discussion document.

TN is reduced almost 1,000,000 pounds per year below the 2025 allocation in this analysis. This is because lower allocations were necessary to help meet the James River-specific allocations intended to meet the chlorophyll *a* criteria in the lower James.

Exhibit 1 provides more detail and perspective about our reasoning for focusing on the WWTP sector and the James River basin, how we arrived at these estimates, and how they and

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other options can replace and/or augment our recommended actions to fully achieve the 2025 goals for both TN and TP.

Table 2: Revised Virginia Chesapeake Bay TMDL Allocations [Million Pounds/Year]

Source Sector	Draft WIP Allocations		August 24 th Document		CBF Allocation	
	Nitrogen	Phosphorus	Nitrogen	Phosphorus	Nitrogen	Phosphorus
Agriculture	16.391	2.146	14.35	2.080	14.350	2.080
Urban Runoff	3.915	0.380	6.00	1.020	6.00	1.020
Wastewater	20.394	1.832	20.030	1.730	15.134	1.730
Septic	1.922	0	2.370	0	2.370	0
Forest	13.939	1.090	13.939	1.090	13.939	1.090
Non-Tidal Dep.	0.612	0.058	0.612	0.058	0.612	0.058
Total	57.173	5.656	57.3	5.98	52.40	5.98
TMDL Allocations	53.4	5.41	53.4	5.41	53.4	5.41
Overage	+3.77	+0.25	+3.90	+0.57		

Table 3: Revised Virginia Chesapeake Bay TMDL Allocations—2017 Target [Million Pounds/Year]

Source Sector	Draft WIP Allocations		August 24 th Document		CBF Allocation	
	Nitrogen	Phosphorus	Nitrogen	Phosphorus	Nitrogen	Phosphorus
Agriculture	18.389	2.507	17.346	2.364	17.346	2.364
Urban Runoff	6.38	1.044	6.348	1.092	6.348	1.092
Wastewater	16.359	1.238	20.03	1.73	18.234	1.73
Septic	2.871	0	2.474	0	2.474	0
Forest	13.939	1.091	13.76	1.09	13.76	1.09
Non-Tidal Dep.	0.612	0.060	0.612	0.059	0.612	0.059
Total	58.55	5.940	60.57	6.447	58.94	6.447
Progress by 2017	59.04	6.035	59.04	6.035	59.04	6.035
Overage			+1.53	+0.412		

Since the majority of the cut in allocations is taken from WWTPs in the James River, in **Table 4 and 5** below we illustrate whether our recommendations similarly help meet the goals in the James. For both TN and TP, our suggestions help meet the 2017 goals and nearly meet the 2025 goals.

Table 4: Revised James River Basin TMDL Allocations [Million Pounds/Year]

Source Sector	Draft WIP Allocations		August 24 th Document		CBF Allocation	
	Nitrogen	Phosphorus	Nitrogen	Phosphorus	Nitrogen	Phosphorus
Agriculture	4.171	0.678	3.540	0.610	3.540	0.610
Urban Runoff	1.100	0.150	2.530	0.550	2.950	0.550
Wastewater	14.770	1.276	14.780	1.276	9.773	1.276
Septic	0.440	0.000	0.910	0.000	1.020	0.000
Forest	5.993	0.555	5.993	0.555	5.993	0.555
Non-Tidal Dep.	0.316	0.031	0.316	0.031	0.316	0.031
Total	26.790	2.690	28.069	3.022	23.6	3.022
TMDL Allocations	23.480	2.340	23.480	2.340	23.48	2.340
Overage	+3.310	+0.350	+4.589	+0.570	+0.11	+0.682

Table 5: Revised James River Basin TMDL Allocations—2017 Target [Million Pounds/Year]

Source Sector	Draft WIP Allocations	August 24 th Document	CBF Allocation
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	<i>Nitrogen</i>	<i>Phosphorus</i>	<i>Nitrogen</i>	<i>Phosphorus</i>	<i>Nitrogen</i>	<i>Phosphorus</i>
Agriculture	4.680	0.800	4.302	0.61	4.302	0.754
Urban Runoff	2.700	0.563	2.698	0.55	2.698	0.590
Wastewater	11.441	0.775	14.780	1.08	11.539	0.714
Septic	1.110	0	0.954	0	0.954	0.000
Forest	5.993	0.556	5.993	0.57	5.993	0.570
Non-Tidal Dep.	0.316	0.030	0.316	0.03	0.316	0.030
Total	26.24	2.724	29.043	2.84	25.802	2.658
Progress by 2017	26.24	2.724	26.24	2.724	26.24	2.724
Shortage/Overage			+2.083	+0.116		

In sum, we believe the proposed revised allocations are equitable, realistic, and attainable, and our recommendations can assist in meeting them through 2025.

V. The Value of the Bay and Clean Waterways Across Virginia.

The draft WIP and this comment have thus far discussed new actions, and potentially new costs, to deliver additional pollution reductions to the Bay and its rivers. There has been considerable discussion by the McDonnell Administration, stakeholders, and in the media about how much it will cost the state, businesses, and the people of Virginia to implement the WIP.

To put these costs in proper context, one must consider the other side of the equation—that clean water improves economic opportunities for all Virginians, through increased benefits to vital sectors of the economy that rely on our waterways and decreased burdens on businesses and citizens impacted by water pollution. In **Exhibit 2**, we provide extensive documentation on eight categories of benefits or avoided costs that demonstrate the value of the Bay and clean waters across Virginia. Here are several striking highlights of the exhibit to consider:

- Based on a 1989 study by the University of Maryland, an expert panel set the value of the Bay at over \$1 trillion, with an annual economic benefit of \$33 to \$60 billion.^{60,61,62,63}
- A 2008 National Oceanic and Atmospheric Administration (NOAA) report said that commercial seafood industry in Maryland and Virginia contributed \$2 billion in sales and more than 41,000 jobs to the local economy.⁶⁴
- Our crab report from 2008 calculated that between 1998 and 2006 crabbing-related jobs in Maryland and Virginia declined 40 percent, from 11,246 to 6,760.⁶⁵

⁶⁰ Maryland Department of Economic and Employment Development. 1989. *Economic Importance of the Chesapeake Bay*.

⁶¹ Chesapeake Bay Blue Ribbon Finance Panel. 2004. *Saving a National Treasure: Financing the Clean up of the Chesapeake Bay*. A Report to the Chesapeake Executive Council from the Chesapeake Bay Watershed Blue Ribbon Finance Panel.

⁶² EPA. 2009. *Draft Chesapeake Bay Compliance and Enforcement Strategy*.

⁶³ Maryland Department of Natural Resources. www.dnr.state.md.us/dnrnews/infocus/bay_faq.html. Visited July 22, 2010.

⁶⁴ NOAA 2008. *2008 Fisheries Economics of the U.S.*

⁶⁵ CBF. 2008. *Bad Water and the Decline of Blue Crabs in the Chesapeake Bay*.

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- Our 2010 oyster report states that the decline of the Bay oyster over the last 30 year meant a loss of more than \$4 billion for Maryland and Virginia.⁶⁶
- A recent study in Hampton, Virginia found that resident and non-resident boaters w responsible for \$55 million in economic impact and 698 jobs to this city.⁶⁷
- A study by the Brookings Institute projected a 10 percent increase in property value homes near a proposed \$26 billion Great Lakes restoration project.⁶⁸
- Threats from sewage and bacteria forced Maryland and Virginia to close or restrict shellfish harvesting in 223,864 acres of the Bay and its rivers in 2008, eight percent total shellfish beds.⁶⁹
- An EPA study of drinking water protection concluded that for every \$1 spent on so water protection, an average of \$27 is saved in water treatment costs.⁷⁰
- A study by the University of Virginia concluded that over a five year period implementation of agricultural BMPs in line with the Virginia tributary strategies w create nearly 12,000 jobs and that every \$1 spent to implement BMPs generates \$1. economic activity.⁷¹

When discussing the James River Strategy, the draft WIP states that the Commonw will be conducting a cost-benefit study to help inform the Phase 2 WIP process.⁷² We urge state to reflect upon the information in this section and consider the jobs, economic benefit, foregone costs associated with clean water when preparing the final WIP and conducting fi cost-benefit analysis to support WIP execution.

VI. Conclusions.

CBF believes firmly that the draft WIP falls far short of meeting Virginia's obligati under its Constitution and state laws, and does not allow EPA to meets its own obligations the Clean Water Act to create a Bay TMDL package that provides reasonable assurance the quality standards will be achieved and maintained in the Chesapeake Bay and its rivers. W further believe that by creating a final WIP that includes the types of recommendations we describe that Virginia can chart its own course for meeting the Bay TMDL—something the majority of Virginians prefer.

⁶⁶ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

⁶⁷ Virginia Institute of Marine Science. 2009. Assessment of the Economic Impacts of Recreational Boating City of Hampton.

⁶⁸ J.C. Austin, et. al. 2007. *America's North Coast: A Benefit-Cost Analysis of a Program to Protect and Res. Great Lakes*. Brookings Institute, Great Lakes Economic Initiative.

⁶⁹ Data from Departments of Health in Virginia and Maryland cited Chesapeake Bay Foundation. 2010. On th Chesapeake's Native Oysters. What it will take to bring them back.

⁷⁰ U.S. EPA. *Economics and Source Water Protection*. Presentation by Eric Winiecki, EPA.

⁷¹ Rephann, T.J. 2010. Economic Impacts of Implementing Agricultural Best Management Practices to Achie Outlined in Virginia's Tributary Strategy. Weldon Cooper Center for Public Service, University of Virginia. 23, 2010.

⁷² See draft WIP, page 17.

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There is no question that creating a WIP that provides reasonable assurance that the Bay TMDL will be met is not an easy task. If it were, we would have completed the work years ago. However, based on our respect for the skills and experience of the agency staff charged with composing the final WIP, we have high expectations that a much improved document will be submitted to EPA on November 29. Nonetheless, if the McDonnell Administration fails to improve the WIP, CBF supports EPA's proposal to shift more pollution reduction responsibilities to regulated point sources via the backstop TMDL, use its residual authority to address NPS pollution, and to assume a more direct role in the protection of our waters.

This is our generation's chance to make our mark and finish the job. We need to take it. It is far past time for all of us to make a real commitment to cleaning up the Bay and its 100,000 streams so we can stop passing on our pollution to the creek across the street, to our neighbors, to the businesses downstream, and ultimately, to our children.

Thank you again for the opportunity to comment on this critically important work for the people of Virginia. If you have any questions regarding these comments, please feel free to contact me at 804/780-1392 or at mgerel@cbf.org.

Sincerely,



Mike Gerel
Virginia Senior Scientist

Attachments: EXHIBIT 1: DETAILED RECOMMENDATIONS FOR THE
COMMONWEALTH OF VIRGINIA CHESAPEAKE BAY TMDL PHASE 1
WATERSHED IMPLEMENTATION PLAN

EXHIBIT 2: THE VALUE OF THE CHESAPEAKE BAY AND CLEAN
WATER ACROSS VIRGINIA

cc: The Honorable Douglas Domenech, Virginia Secretary of Natural Resources
The Honorable Todd Haymore, Virginia Secretary of Agriculture and Forestry
Anthony Moore, Assistant Secretary for Chesapeake Bay Restoration
David Paylor, Director, Department of Environmental Quality
David Johnson, Director, Department of Conservation and Recreation
The Honorable Shawn Garvin, Administrator, EPA Region 3
Jeff Corbin, Special Assistant to the Regional Administrator
Roy Hoagland, Vice President for Environmental Protection and Restoration, CBF
Jon Mueller, Vice President for Litigation, CBF
Ann Jennings, Virginia Executive Director, CBF
Beth McGee, Senior Regional Water Quality Scientist, CBF
Peggy Sanner, Virginia Staff Attorney, CBF
Kristen Hughes, Virginia Staff Scientist, CBF

EXHIBIT 1:

**DETAILED RECOMMENDATIONS FOR THE COMMONWEALTH OF VIRGINIA
CHESAPEAKE BAY TMDL PHASE 1 WATERSHED IMPLEMENTATION PLAN**

¹ *Chesapeake Bay TMDL Phase 1 Watershed Implementation Plan. Revision of the Chesapeake Bay Nutrient Sediment Tributary Strategy. Public Review Draft. Commonwealth of Virginia. September 2010. Hereinafter WIP.*

I. Wastewater Treatment Plants

Background

Virginia has made significant progress over the last five years reducing nutrient pollution from 125 of the state's largest municipal and industrial WWTPs. These "significant dischargers" represent about 95 percent of the WWTP flow to the Bay from Virginia. Virginia adopted revisions to the Water Quality Management Planning Regulations (WQMPs) in 2005 that established enforceable annual TN and TP load limits (or "caps") for these large plants.² "Technology regulations" also adopted in 2005 set annual nutrient concentration limits for new and existing plants that exceed specified flow capacities.³ In 2005 the General Assembly established the NCE to allow the exchange of nutrient credits between plants to help reduce costs and accelerate achievement of the caps and subsequent nutrient reduction goals.⁴ A Watershed General Permit (WGP) was developed in 2006 to implement these new programs and establish a 2011 deadline for meeting the caps.⁵ In addition, \$1.5 billion in state monies from the Water Quality Improvement Fund (WQIF) and Virginia Resources Authority (VRA) as well as federal assistance from the State Revolving Loan Fund (SRLF) were provided over this period to help pay for plant upgrades.⁶ Finally, to address future growth, the NCE law and a revision to that law in 2009, require a complete offset of any nutrient pollution from existing significant dischargers that expand and new plants that exceed 1,000 gallons per day (GPD).⁷

The new programs put in place over the last five years represent a substantial increase in program capacity. According to the Virginia Department of Environmental Quality (DEQ), these new efforts have specifically supported 44 plant upgrades and 46 nutrient exchange contracts, which are projected to deliver enough nutrient pollution reductions to meet the 2011 wastewater caps.^{8,9} In total, these efforts are estimated to provide pollution reductions to the Bay of about 6,600,000 pounds TN and 580,000 pounds TP.¹⁰ Note that using these same programs, up to 60 additional plant upgrades could take place after 2011 to help maintain the cap into the future.¹¹

² 9 VAC 25-720.

³ 9 VAC 25-40.

⁴ Va. Code § 62.1-44.19.

⁵ 9 VAC 25-820. General Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia. January 1, 2007.

⁶ See draft WIP.

⁷ Va. Code §§ 62.1-44.19:14 and 62.1-44.19:15 (HB 1135, 2010).

⁸ DEQ. 2010. PowerPoint Presentation. *Progress Report on Virginia Water Quality Improvement Fund—Point Source Nutrient Reductions in Chesapeake Bay Watershed*. January, 2010.

⁹ See draft WIP.

¹⁰ See www.deq.state.va.us/bay/wqiflist.html#draft.

¹¹ DEQ. 2010. PowerPoint Presentation. *Progress Report on Virginia Water Quality Improvement Fund—Point Source Nutrient Reductions in Chesapeake Bay Watershed*. January, 2010.

Draft WIP

The draft WIP sets the 2005 nutrient caps in the WQMP as the WLAs for this sector. In other words, *no additional* pollution reductions beyond the existing caps are required of an existing WWTP through 2025.

In trying to meet the TMDL allocations while forgoing additional reductions from WWTP, allocations for other sectors were set based on an “E3” level of treatment, or “everything, everywhere, by everyone,” for urban and septic source sectors. This level of treatment was included in materials for the SAG as a theoretical maximum amount of reductions that are possible, not as a level of effort that was realistic to expect from any source sector. EPA guidance was explicit that if a WIP relies on implementation approaching or beyond E3 level of treatment that “EPA expects the Bay jurisdiction to provide documentation supporting the achievement of such an extraordinary level of effort.”¹² Although the WIP proposed E3 level of treatment for these sectors, the required documentation was not provided. Further discussion of the proposal to use E3 levels of treatment for the urban runoff and septic source sectors are provided later in this document.

Despite the inclusion of these completely unrealistic implementation levels for urban and septic sectors, the James River basin still failed to meet the 2025 TMDL allocations for TN by 3,300,000 pounds per year (lbs/year) and for TP by 350,000 pounds per year (lbs/year). The draft WIP addresses this shortfall by indicating that a poorly-described expansion of the NCE area and a potential future revision of the chlorophyll *a* standard for the lower James River will allow the TMDL allocation to ultimately be met. CBF is on record with our opposition to the Commonwealth’s unjustified presumptions that the chlorophyll *a* standard will be loosened and the TMDL allocations for the James River will be increased.¹³ The current chlorophyll *a* standard is *the* standard until it is formally changed via the Administrative Process Act—and any TMDL and WIP must be written to meet the current standard. We will plan to participate actively in public elements of the James River Chlorophyll Study or water quality standard revision process should either move forward.

Some strong programs are in place to address future growth in this sector. However, there are some gaps related to smaller facilities that need to be addressed. Offsets are currently not required for existing plants with a design flow less than 40,000 GPD that are expanding and will still be under 40,000 GPD. Also not addressed are new municipal WWTPs under 1,000 GPD and industrial plants below 40,000 GPD. The draft WIP mentions both of these deficiencies but does not commit to actions to address them.

Overall, the Commonwealth’s recent success cutting pollution by this sector and the decision to forgo further reductions from this sector and seek E3 reductions from other sectors

¹² EPA. 2010. A Guide for EPA’s Evaluation of Phase 1 Watershed Implementation Plans. April 2, 2010.

¹³ Letter from Bill Street, JRA and Ann Jennings, CBF to Alan Pollock, DEQ and Russ Perkinson, DCR dated 8/27/2010 regarding Virginia’s actions in support of the existing chlorophyll *a* standard for the James River.

leads us to draw *three* broad conclusions. We discuss these observations in detail below as they help form the basis for our recommendations for how to improve the draft WIP.

First and foremost, the draft WIP must be revised in such a manner to ensure that the TMDL allocations for the James River basin are met. The CWA prevents EPA from approving a TMDL that does not meet water quality standards.

Second, additional pollution reductions from this sector are feasible, reasonable, and cost-effective. These pollution reductions are absolutely critical to help erase the shortfall in the James River basin and help alleviate the lack of reasonable assurance in all basins for other source sectors. Our basis for this position is as follows:

- Wastewater has the strongest nutrient pollution reduction program capacity in place compared to the other sectors.
- Wastewater is the largest source of nutrient pollution to the James River, contributing half of the nitrogen and a third of the phosphorus pollution. Further, the wastewater flow to the James represents nearly half of the wastewater flow from Virginia to the Bay watershed.
- In parts of the Lower James River, chlorophyll *a* levels are highest during low flow conditions when wastewater discharges play a larger role compared to normal or high flow conditions. Given the large influence that wastewater flows have on the river during these times, further nutrient reductions from WWTP discharges must be part of the solution for meeting the spring/summer chlorophyll *a* standards in the tidal fresh and lower estuarine segments of this river.
- Pursuing further reductions from WWTPs that discharge to the lower James supports the dual goal of helping to meet the chlorophyll *a* standards in the lower river and to meet the dissolved oxygen and water clarity standards in the James and Bay main stem.
- WWTP remain one of the most cost effective nutrient pollution controls available. DEQ recently reported cost for the recent plant upgrades averaged \$6 per pound TN and \$15 per pound TP.¹⁴ There is little question that many of the same citizens—the ratepayers—that are helping to pay for wastewater upgrades, will also end up helping to pay for measures to address the existing urban runoff and septic source sectors. Maximizing cost efficiency for these ratepayers should be paramount.
- The level of treatment required in the James River basin is less than what is being required of wastewater dischargers in other Virginia basins. For example, the annual average concentration limits used to set the caps in the WQMP in 2005 for plants in the James and York River basins (6.0-12.7 mg/L TN and 0.5-1.0 mg/L TP), were higher than the more stringent state-of-the-art (SOA) limits used for the Potomac, Rappahannock, and Eastern Shore basins (3.0-4.0 mg/L TN and 0.3 mg/L TP). Further, a provision in the Technology Regulation allows plants to operate above their “concentration base” if it is

¹⁴ DEQ. 2010. *Cost of Point Source Credit for TN/TP—WQIF Projects*.

not necessary to meet their cap.¹⁵ Therefore, the “effective” performance base for plants that discharge to the Lower James River in Hampton Roads ranges from better than biological nutrient removal (BNR, 5.0-8.0 mg/L TN) to less than secondary treatment (20.5 mg/L TN) for TN and BNR or less (1.0-1.5 mg/L TP) for TP. Thus, many of the plants could upgrade to provide anywhere from BNR to SOA treatment to provide additional pollution reductions and establish equitable requirements for plants across river basins.

- As of 2009, WWTPs in Virginia that discharge to the Bay watershed were using on average 60 percent of their design capacity to set the caps in the WQMP in 2005.¹⁶ This large capacity has allowed plants to operate far above their concentration base. These design flows were calculated in 2004 during one of the largest land development booms in Virginia’s history. Therefore, it is fair to question whether this capacity truly represents that which is realistically needed by communities for expected economic development in the near future.

Third, the same approach used to deliver pollution reductions from the wastewater sector should be used as a blueprint for achieving more assured reductions from the NPS sectors. The accomplishments of this sector provide clear evidence that significant pollution reductions are possible when reasonable assurance is provided, in this case, through strong mandates, including a reasonable compliance schedule; significant public funding; and market-based incentive programs. These same steps are necessary if existing NPS reductions are to be realized.

Recommendations

Based on our conclusions above, we offer **five** specific recommendations for revising the draft WIP with respect to WWTP wasteload allocations. These actions are intended to provide significant additional pollution reductions to help achieve the spring/summer chlorophyll *a* standards in both lower James segments, assist with achieving TMDL goals in the James River by both 2017 and 2025, and provide additional reductions to assist in providing a higher level of reasonable assurance that revised pollution allocations in **Section IV** for the entire Virginia watershed can be met. Additional feasible options for achieving more pollution reductions from large WWTPs are provided at the end of the first recommendation. As noted previously, our recommendations are not the only means to improve the draft WIP; the list of recommendations we present are intended to show the wide range of options available to the Commonwealth to meet the TMDL goals.

(1) Require phased upgrade of 11 large plants in the Lower James River by 2025.

The Commonwealth should require that eleven of the largest municipal WWTPs that discharge to the Lower James River between Chesterfield County and the mouth of the James River be upgraded by 2025.

¹⁵ 9 VAC 25-40-70.A.4.

¹⁶ See draft WIP.

River upgrade to achieve a 5.0 mg/L TN and 0.3 mg/L TP by 2025.¹⁷ We used a step-wise approach to select WWTPs for upgrade. First we focused on several larger municipal plants that have WLAs based on TN concentrations that exceed BNR treatment for TN (several even approached secondary treatment). This strategy would bring the performance of these very large municipal WWTPs more in line with the performance required of comparable plants in the other river basins. Then we selected municipal WWTPs that have a design flow of 20 MGD or more. We also looked to balance reductions from WWTPs that discharge to both the tidal fresh and lower estuary of the James. And lastly, we took into consideration whether plants had very recently completed an upgrade and deferred those plants for further upgrades until 2025.

Note that this analysis focuses on what plants are authorized to discharge in the WGP and WQMP, in other words, their TN/TP concentration basis and design flow used to set their WLAs in 2005, the most current information available to the public. The best way to approximate potential future reductions in delivered pollution was to only include reductions from installation of new technology that improves upon the TN/TP concentration basis. The current significant excess flow capacity—and the higher TN/TP concentrations it can allow—precludes using current flow and performance to draw meaningful conclusions about what additional pollution reductions may be available in the future. Therefore, this recommendation focuses on what *could* be discharged under an individual WWTP permit, not what the plants are *choosing* to discharge today.

Also be aware that we do not have access to the Bay model or scenario builder, so the pollution reductions projected here are estimates. They are solely intended to illustrate that options are available *between* the approach taken in the draft WIP of not pursuing any further WWTP upgrades through 2025, and the EPA backstop that seeks upgrades by all significant WWTPs that discharge to the Bay to 4.0 mg/L TN and 0.3 mg/L TP. Further, use of the NCE, exchange of TN and TP allocations, and other strategies may allow some of the proposed upgrades to be unnecessary. The absolute bottom line is that for the final WIP to be acceptable it must include a mix of upgrades and other strategies that meet the TMDL allocations.

To first allow a full accounting of new reductions that can be anticipated, **Table 1** describes the two Lower James River plant upgrades that are already funded and scheduled to come on-line by 2013 that improve upon the TN/TP concentration performance. It is our understanding based on discussions with DEQ staff that these reductions are not yet counted by EPA as progress through 2009. It is our further understanding that these projected reductions have been considered by the Commonwealth when it states that the overall 2011 goal for WWTPs will be met.

¹⁷ Based on its significant industrial influent that may contain significant soluble TN, we included an upgrade to 8.0 mg/L TN for the Hopewell WWTP.

Table 1—Lower James River WWTP Upgrades Anticipated Through 2013

Plants	Current TN Annual Average Concentration Base for WLAs	Upgrade TN to	Rough Delivered Reductions Provided (lbs/yr)	Deadline
Proctors Creek	6.3	5.0	83,703 TN	2012
HRSD-Army Base	11.2	5.0	336,000 TN 26,000 TP	2013
Totals:			420,000 TN 26,000 TP	

Table 2 summarizes the additional upgrades recommended to further improve upon performance through 2025.

Table 2—Proposed Lower James River WWTP Upgrades Through 2025

Plants	Current TN Annual Average Concentration Base for WLAs	Upgrade TN to	Current TP Annual Average Concentration Base for WLAs	Upgrade TP to	Rough Delivered Pounds/Year Reductions Provided (lbs/yr)*	Plants
Richmond	8.0	5.0	0.5	0.3	411,045 TN 27,404 TP	
Proctors Creek	n/a	n/a	0.65	0.3	21,468 TP	
Henrico	n/a	n/a	0.5	0.3	45,673 TP	
Hopewell	12.0	8.0	0.5	0.3	608,923 TN 30,449 TP	
South Central	n/a	n/a	0.5	0.3	14,006 TP	
HRSD Boat Harbor	9.7	5.0	1.0	0.3	359,246 TN 53,294 TP	
HRSD James River	20.5	5.0	1.0	0.3	945,397 TN 42,635 TP	
HRSD Williamsburg	11.7	5.0	1.0	0.3	457,321 TN 47,964 TP	
HRSD Nansemond	8.3	5.0	1.0	0.3	63,953 TP	
HRSD-VIP	n/a	n/a	1.0	0.3	293,095 TN	
HRSD Ches-Eliz	15.0	5.0	1.5	0.3	85,270 TP 734,476 TN 86,743 TP	
Totals:					3,810,000 TN 519,000 TP	

* Lesser reductions may result if excess design flow is retired as discussed in the second WWTP recommenda

We estimate that upgrading these eleven significant WWTPs by 2025 can achieve the basin-wide TMDL allocations for the James in 2017 and 2025 and the revised Virginia Bay watershed-wide allocations called out in **Section IV**. However, there are an array of strategies to achieve further reductions from WWTPs. The following strategies may also be workable:

- Require upgrades to significant WWTPs that discharge to the lower James River such that all plants achieve 4.0 mg/L TN and 0.5 mg/L TP. This would require 14 plants upgrade their TN treatment and seven plants to improve TP performance. Reductions

pollution delivered to the Bay could be reduced by approximately 5,253,000 lbs TN and 245,126 lbs TP.

- Mandate upgrades such that all significant WWTPs watershed-wide achieve 4.0 mg/L TN and 0.3 mg/L TP. This approach would be consistent with the proposed EPA back-stop action for WWTPs.
- Require upgrades such that all significant WWTPs watershed-wide achieve 3.0 mg/L TN and 0.3 mg/L TP.
- Require upgrades of significant WWTP plants to 3.0-4.0 mg/L TN and 0.3 mg/L TP that serve Phase 1 MS4 communities or both Phase 1 and 2 MS4 communities.
- Require upgrades of plants in the York River basin from 6.0 mg/L TN and 0.5 mg/L to at least 5.0 mg/L TN and 0.3 mg/L to achieve nutrient treatment more consistent with WWTPs in the other river basins.

The existing Virginia Pollutant Discharge Elimination Program (VPDES) and NCE program are in place to help facilitate these recommended upgrades. However, regulatory changes and significant funding will be needed to accomplish these recommendations. Existing funding for WWTP upgrades is already \$130 million in arrears, so existing past funding allocations are not available to support new programs.¹⁸

The new WLAs necessitated by these upgrades would need to be included in the next WGP due by January 1, 2012 and in the WQMP.¹⁹ We recognize that meeting this requirement might be logistically challenging for some WWTPs. However, to advance the type of pragmatic upgrade schedule listed above to help meet these new WLAs in light of the existing regulatory guidelines regarding compliance within the VPDES permit cycle, Virginia could propose the development of a permit for only those WWTPs subject to a chlorophyll *a* standard, subject to public notice and comment and followed by a judicially enforceable agreement, that includes a binding compliance schedule that will meet the requirements set forth in the new Bay TMDL by 2025.

Obtaining consistent financial assistance from the legislature to pay for mandated upgrades through 2025 is absolutely critical. General Fund appropriations, bond authority, and other options are needed. A high cost-share percentage (at least 60 percent) will also be vital to ensure an equitable cost-sharing between state and locality budgets. The Commonwealth could consider prioritizing funding to WWTP projects that are upgrading nutrient treatment capabilities or expanding to take smaller plants, onsite systems, or other pollution sources (landfills, for example) off line, over projects that are only expanding capacity to support future development. WWTP pollution reductions are supported by strong existing program capacity (in terms of regulatory mechanisms, staffing, and tracking), are some of the most cost-effective available, are supported by millions of rate payers, and create well-paying construction and engineering jobs.

¹⁸ DEQ. 2010. PowerPoint Presentation. *Progress Report on Virginia Water Quality Improvement Fund—Point Source Nutrient Reductions in Chesapeake Bay Watershed*. January, 2010.

¹⁹ 9 VAC 25-31-250.

While year-by-year funding of nearly \$1 billion via the General Fund and bond packages has carried the program since the late 1990s, pursuing a consistent funding source would provide better surety to local WWTPs that are asked to carry increased pollution reduction responsibilities.

The NCE also has the potential to help accomplish these reductions faster and at less costs. A full discussion of an expanded NCE is provided later in this section.

(2) Retire five percent of existing “nutrient credits” currently tied to excess capacity in WLAs for WWTPs in the James River Basin by 2011.

Virginia should permanently retire five percent of the existing “nutrient credits” tied to the currently unused flow capacity from all 27 municipal WWTPs in the James River basin. This action will provide an immediate reduction in authorized delivered nutrient pollution to **572,000 lbs/yr TN** and **50,000 lbs/yr TP**. Again, focusing reductions on the James Basin can further help ensure adequate reductions are provided to meet the chlorophyll *a* standard. Options include retiring five percent of the nutrient credits tied to excess flow watershed-wide (delivering pollution reductions of approximately 1,940,000 lbs TN and 177,000 lbs TP) or retiring ten percent of the nutrient credits tied to excess flow Virginia Bay watershed-wide (approximately 948,000 lbs TN and 88,000 lbs TP).

CBF is aware that WWTP capacity is a significant local tool used to attract economic development, and the prospect of pulling back existing WLAs may not appear immediately attractive, or even fair. Keep in mind that should this capacity—or additional capacity—be needed by localities in the future as the economy recovers, the NCE was specifically created to help accommodate future WWTP pollution loads. Any expansions to the NCE, including additional authorities and mandates to compel buying and selling, are likely to be complete by the time the retired capacity is needed.

Revisions to the next WGP and WQMP would be necessary to achieve these reductions. Any permanent reductions in design flow, and resultant reduction in WLAs, provides pollution reductions at no new costs to the Commonwealth. Using new funding sources to pay for WWTP upgrades and forestalling use of these existing nutrient credits now, is akin to borrowing money from a friend to pay a debt when you have sufficient money in your bank account to pay the debt. If the Commonwealth is serious about pursuing the most cost-effective solutions, immediately retiring a modest amount of existing nutrient credits is a useful approach.

(3) Require upgrades by the largest existing non-significant municipal WWTPs by 2025

The Commonwealth should require upgrades of existing non-significant WWTPs that discharge greater than or equal to 200,000 GPD to achieve to BNR. This would require 37 plants to achieve 8.0 mg/L TN and 1.0 mg/L TP by 2025. These plants are all above the fall line as plants below the fall line that discharge more than 100,000 GPD already must meet more stringent treatment standards. A plant that treats this volume of wastewater is not small; it

supports approximately 2,000 households. We believe it is more than appropriate to ask these large non-significant plants to upgrade some time in the next 15 years. Further, this action will benefit the Bay, and will also help comply with existing and planned mandates to improve water quality in local streams. For example, nutrient criteria for freshwater streams are scheduled to be promulgated by 2013 for wadeable streams and 2014 for non-wadeable streams.²⁰

Table 4 below describes the plants that should upgrade and a rough estimate of nutrient pollution reductions that can be realized through the upgrades.

Table 4—Upgrades by Largest Non-significant Dischargers

Facility Name	Flow (MGD)	Delivered TN Reductions (lbs/yr)	Delivered TP Reductions (lbs/yr)
Boston Water and Sewer STP	0.45	8947	1254
Culpeper County Industrial Airpark STP	0.3	3031	1371
Zion Crossroads WWTP	0.7	13917	1951
McGaheysville STP	0.499	7156	1003
Summit STP	0.32	7717	1081
Appomattox Water Reclamation Facility	0.3	5964	836
Virginia Correctional Center for Women	0.3	7822	1097
Dept of Corrections, Fluvanna Correctional Center	0.3	5964	836
Wintergreen Mountain	0.3	5964	836
Stanley STP	0.49	10700	1500
DOC - Buckingham Correctional Center	0.3	5964	836
Amelia County Sanitary District	0.999	12373	1735
Thornburg Community STP	0.345	11244	1576
Bierer STP	0.35	7643	1071
Camelot STP	0.365	7257	1017
Shenandoah STP	0.4	8735	1225
Grottoes STP	0.4	5736	804
Louisa Regional STP	0.4	7953	1115
Craigsville STP	0.435	6238	875
Hot Springs Regional STP	0.65	6356	891
Glasgow STP	0.495	4840	679
Greens Corner WWTP	1.5	29822	4181
Four Winds Campground STP	0.21	6844	960
Buckingham Co Water System/Dillwyn STP	0.2	3976	557
Land Or Utility WWTP	0.22	7170	1005
Scottsville STP	0.2	3976	557
Meadowbrook WWTP	0.2	3976	557
James River Correction Center	0.216	5632	790
Nelson County Regional STP	0.22	4374	613
Buchanan STP	0.2375	2322	326
Bowling Green WWTP	0.25	8148	1142

²⁰ DEQ. 2010. *Nutrient Criteria Development Plan for the Commonwealth of Virginia*. March 24, 2004 (with 2010 Updates).

Middletown STP	0.25	6029	845
Lovettsville Town WWTP	0.25	6763	948
Crooked Run STP	0.25	6030	845
George Mason University - Conference Center	0.25	8148	114
Greenville WWTP	0.25	6519	914
Dutoy Creek WWTP	0.25	6519	914
	14.1	277,769	39,88

Amendments to the WQMP and Technology Regulation would be necessary to achieve these reductions. Further, a consistent source of financial assistance from the legislature for mandated upgrades through 2025 is essential. A high cost-share percentage (at least 75 percent, if not more) will be needed, as most of these plants are operated by small towns.

(4) Install infrastructure to reuse two percent of municipal WWTP flow by 2017.

The state should create statewide incentives via the Code to facilitate the installation of infrastructure and nutrient management plan (NMP) implementation to support reuse of two percent of Virginia Bay watershed-wide municipal flow. Based on a total municipal WWTP flow of 585 MGD and annual average concentration limits of 5.0 mg/L TN and 0.5 mg/L TP, reuse of 11.7 MGD could generate pollution reductions of **178,000 lbs/yr TN** and **17,800 lbs/yr TP**.

Wastewater reuse is particularly important in areas of the state that are vulnerable to drought conditions. Wastewater could be directed for irrigation of golf courses, recreational fields, and open spaces, as well as use for cooling water or other industrial uses. Any reuse of wastewater must be applied in accordance with NMP requirements to ensure zero discharge of nutrients to ground or surface waters. Any nutrients discharged in excess of NMPs or that pass through an industrial process must be removed from the reduction created.

As costs to install and maintain pipes and pump stations to relocate reuse water can be a considerable barrier, changes to the Code would be required to authorize grants, low interest loans, business tax credits, and/or the authority for localities to offer their own tax credits, fee waivers, or other incentives to compel interest. Efforts to pursue this level of reuse should be pursued immediately, perhaps through targeted incentives and outreach to golf courses.

(5) Require offsets of new nutrient pollution from small municipal and industrial WWTPs

The Commonwealth should require nutrient pollution offsets from new municipal WWTPs that discharge less than 1,000 GPD (usually single-family homes) and new industrial facilities that discharge less than 40,000 GPD. This action will help ensure that the aggregate load from new and expanding residential development and industry will not erase progress elsewhere. Amendment of the nutrient NCE law would be required to accommodate this new requirement. It may be appropriate to create an in-lieu fee component of the trading program to collect a standard fee to mitigate the smaller pollutant loads generated by these sources, as well as on

septic loadings discussed later in this section. An expanded NCE is discussed later in this section.

Conclusion

EPA's "backstop" allocations include upgrades to 4.0 mg/L TN and 0.3 mg/L TP by all 39 municipal and industrial WWTPs in the James River basin. Virginia has the flexibility to pursue the modified approach outlined in the preceding section that we believe provides additional pollution reductions that are feasible, equitable, and cost-effective. Types of actions recommended in this section may be preferable to the region-wide approaches available to EPA.

II. Agriculture

Background

Over the past few decades, Virginia farmers have made significant progress in reducing nonpoint source pollution from agriculture by installing BMPs. One of the most promising aspects of on-farm conservation in Virginia has been the success of federal and state cost-share programs in driving BMP implementation. Farmers have consistently demonstrated the willingness to invest their own resources to install BMPs when cost-share funding is available. Despite historic levels of funding for the federal cost-share programs in Virginia, there is still a backlog of applications. Additionally, there are many farmers who choose not to participate in cost-share programs but who do install BMPs using their own financial resources.

Also, Virginia has a strong history of collaboration amongst stakeholders to develop innovative projects that include demonstrating new technologies, as well as projects designed to accelerate BMP implementation in targeted watersheds and in targeted communities. These efforts are delivering additional financial and technical resources to farmers and demonstrating innovative technologies and practices such as: demonstration of an on-farm portable pyrolysis unit that converts poultry litter to bio-oil, delivery of on-farm technical assistance and private funding resources to the Old Order Mennonite communities for BMP implementation; and delivery of technical assistance and equipment to help farmers better utilize fertilizer and avoid over-application.

However, despite these efforts, Virginia still has a long way to go to reduce nutrient and sediment runoff from agriculture to acceptable levels. The draft agriculture scoping scenario 2008 implementation levels presented to the agriculture work group on July 8, 2010, illustrates that for practices considered high priority, implementation levels as of 2008 are far below the proposed goals.²¹ Although this estimate currently does not include data on voluntary BMPs (i.e. paid for without federal or state cost-share information), the data on BMP implementation using cost-share funds indicates agriculture still has a long way to go. For example, forest or grass

²¹ Commonwealth of Virginia. July 8, 2010. Virginia Chesapeake Bay TMDL WIP DRAFT Agriculture Scoping Scenario Implementation Levels.

buffers of at least 35 feet or more have been installed on just nine percent of cropland, 16 percent of pasture acreage, and zero percent of hay acreage.

While CBF supports the effort currently underway, as directed by 2010 Senate Bill 1 and Code amendments to 2.2-220.3, to establish a program for tracking BMPs installed with cost-share funding, even when these voluntary practices are enumerated, it is likely that the program will reflect we have a way to go towards meeting agriculture nutrient and sediment reduction goals.

A recently released draft report from the U.S. Department of Agriculture (USDA) assessing the effects of conservation on cultivated cropland in the Chesapeake Bay watershed (USDA 2010 Report) further illustrates that existing programs have not made near enough progress in protecting water quality.²² This report considered all conservation practices currently implemented, including practices implemented voluntarily, without federal or state cost-share assistance. The report found that 81 percent of harvested cropland in the Bay watershed lacks some or all conservation measures necessary to reduce nutrient and sediment loss to tolerable levels. The report also found that 81 percent of harvested cropland failed to meet nutrient management planning goals for rate, timing, and placement of fertilizer application. Lack of NMP development and implementation, and subsequent excessive loss of fertilizer nutrient costs Virginia farmers millions of dollars in lost revenue every year. While soil erosion control practices are widespread, 26 percent of crop land still has excessive sediment loss from fields and requires additional erosion control practices. Existing programs have also failed to protect lands most vulnerable to nutrient and sediment loss—47 percent of land in the watershed is considered highly vulnerable to pollution and is classified as “critically undertreated.” While existing programs have made some progress, it is unreasonable to expect they will achieve necessary agricultural nutrient reduction goals.

Draft WIP

The draft WIP proposes ambitious goals for widespread implementation of BMPs on farms. For example, the draft WIP proposes 90 percent implementation levels for riparian buffers on cropland, pasture, and hay acreage by 2025. Implementation of NMPs on cropland is anticipated to increase from 51 percent to 95 percent, and no-till farming is projected to increase from 55 percent to 90 percent by 2025.

The agricultural sector section of the draft WIP relies almost exclusively on existing programs and authorities in addition to a new “expectation” that farmers will widely adopt BMPs, without any concrete drivers proposed to accomplish these ambitious goals. There are no estimates of cost-share funding needed to achieve the proposed reduction, nor is there a plan to secure the funding. The draft WIP also lacks new program capacity—the proposed rules, regulations, permits, or other enforceable, binding measures—to achieve the proposed pollution

²² U.S. Department of Agriculture. 2010. *Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Watershed*.

reduction goals. There is also no schedule for implementation, including no two-year milestone goals.

Recommendations

Below we recommend **eight** specific revisions to the agriculture section of the draft WIP that will help provide a high level of reasonable assurance that the revised pollution allocations for the agricultural sector in Section IV will be met. Note that these allocations are set based on a Level 3 level of effort included in the August 24, 2010 SAG discussion draft.

(1) Develop financial incentives to support enhanced agricultural BMP implementation by 2011.

The availability of cost-share funding is a critical component for the agricultural community to achieve BMP implementation goals. As such, the WIP should include an estimate of the total cost to fund the Virginia Agricultural BMP Cost-Share Program to levels sufficient to ensure adequate cost-share is available for implementation of the practices proposed in the WIP. Also, the WIP should include a plan for securing these funds including legislative proposals.

According to the 2009 report prepared by the Virginia Department of Conservation and Recreation (DCR)²³ (based on the tributary strategy BMP implementation goals), annual funding needs for the Virginia Agricultural Cost-Share Program over the next 15 years total \$1,123,000,000, statewide. Of this total, eight percent will support Soil and Water Conservation District (SWCD) technical assistance, 55 percent will support agricultural BMPs in the Chesapeake Bay basin, and 37 percent will support BMPs in the Southern Rivers. Funding estimates for agriculture BMPs in the Chesapeake Bay watershed total approximately \$620 million and are listed by year in **Table 3**.

Table 3--Chesapeake Bay Watershed Ag BMP Cost-share Funding Projected Needs*

FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
\$22**	\$24.3	\$26.6	\$31.2	\$33.9	\$36.1	\$38.4	\$40.7	\$43	\$54	\$54	\$56.3	\$58.6	\$60.9	\$63.2

*Based on 2009 report and since FY11 was not funded at recommended level, numbers will need to increase over the following 15 years. An updated 2010 report should be available in mid-November. Also, numbers may change when the Virginia TMDL Watershed Implementation Plan is finalized. Additional funding from the federal Farm Bill will likely reduce these numbers.

**Does not include additional \$5.4 million necessary to meet 2011 milestone. With milestone needs included, total need for FY11 would be \$27.4 million in the Chesapeake Bay watershed.

These funding levels include the funding needed to accomplish levels of reduction from nutrient management planning and implementation on 90 percent of cropland and hayland in the Chesapeake Bay watershed. This level of implementation reflects what would be accomplished if NMPs were developed and implemented on all farms that apply fertilizer or manure to more than 100 acres.

²³ Commonwealth of Virginia. 2009; *Annual Funding Needs for Effective Implementation of Agricultural Best Management Practices*.

In addition to traditional cost-share, CBF recommends an expansion of the Virginia credit program to include transferable tax credits similar to the Pennsylvania Resource Enhancement Program (REAP).²⁴ Producers often owe few, if any, state taxes. The REAP program allows farmers to sell tax credits to other tax payers, similar in concept to the Virginia conservation easement tax credit program outlined in the Virginia Land Conservation Incentive Act of 1999.²⁵ This would require new legislation. CBF recommends capping the proposed transferable tax credit program at \$10 million per year.

CBF also supports the promising idea in the draft WIP to consider amending §58.1- to require certain BMPs to be used on land enrolled in local use value assessment and tax programs. These practices should include: implementation of soil conservation and nutrient management plans, establishment of 35-foot or greater permanent grass or riparian buffers, livestock stream exclusion, and if applicable, appropriate barnyard management.

(2) Expand regulatory drivers for BMP implementation in existing programs through 2

Currently, the only water-quality related regulatory drivers governing Virginia agriculture apply to:

- Confined animal feeding operations (CAFOs) with more than 200 animal units of poultry or 300 animal units of livestock and liquid manure systems (Virginia Pollution Abatement Permit Regulation²⁶);
- Fields receiving biosolids (Biosolids Use Regulations²⁷); and
- Farms in regions covered by the Chesapeake Bay Preservation Act (CBPA) Regulations.²⁸

We recommend the following changes to these existing regulatory programs to provide additional program capacity to deliver nutrient pollution reductions.

(a) Virginia Pollution Abatement Permit for Livestock Animal Feeding Operations

According to the 2007 National Agricultural Statistics Survey, there are over 1,100 dairies operating in Virginia and only 80 of them are currently covered by Virginia Pollution Abatement (VPA) permits for animal feeding operations.²⁹ We recommend expanding coverage to facilities with herd sizes greater than 100 animals by 2017 (which would cover approximately 34 percent of Virginia dairies), and 50 animals by 2025 (covering approximately 55 percent

²⁴ Pennsylvania Department of Agriculture Resource Enhancement and Protection (REAP) description: [http://www.agriculture.state.pa.us/portal/server.pt/gateway/PTARGS_0_2_24476_10297_0_43/AgWebsite/FDetail.aspx?name=Resource-Enhancement-and-Protection-\(REAP\)-&navid=12&parentnavid=0&palid=22&](http://www.agriculture.state.pa.us/portal/server.pt/gateway/PTARGS_0_2_24476_10297_0_43/AgWebsite/FDetail.aspx?name=Resource-Enhancement-and-Protection-(REAP)-&navid=12&parentnavid=0&palid=22&)

²⁵ Va. Code §58.1-510 et seq.

²⁶ 9 VAC 25-32-10.

²⁷ 12 VAC 5-585-10 et seq.

²⁸ Va. Code §10.1-2100 et seq.

²⁹ 9 VAC 25-192-10 et seq.

Virginia dairies). Developing a general permit for smaller facilities would require legislative change to the existing code (Chapter 32, Virginia Pollution Abatement Permit Regulation).

Expanded VPA coverage for smaller dairies will address barnyard management issues, as well as ensure manure is land-applied appropriately. The importance of manure management is illustrated by the USDA 2010 Report that found that 70 percent of the acreage categorized as having the lowest level of conservation treatment for nitrogen management receives manure as fertilizer. In contrast, less than six percent of the acreage categorized as having a high level of nitrogen management receives manure. The USDA 2010 Report further states that the most critical conservation concern in the region is nitrogen loss through subsurface pathways, most of which eventually discharges to surface waters, and that about 65 percent of cropped acres require additional nutrient management to address excessive levels of nitrogen loss to groundwater. Ensuring dairy manure is land-applied appropriately is critical for protecting local and regional surface and ground water quality.

(b) Biosolids Use Regulation

Over 50 percent of the biosolids land-applied in Virginia are imported from out-of-state facilities.³⁰ By 2017, Virginia should eliminate the use of phosphorus index (P index) for fields receiving biosolids. Instead, biosolids should be required to be land-applied according to soil test nutrient recommendations. Also, require the same setback for riparian areas as required for poultry litter (100 feet with no permanent vegetative buffer, and 35 feet with a permanent vegetative buffer).³¹ In addition, eliminate land-application of biosolids in December, January, and February and eliminate application to saturated, frozen, or snow-covered ground. The 2017 deadline will allow for municipal wastewater treatment facilities to install waste-to-energy facilities that convert excess biosolids to renewable energy. Changes to the biosolids regulations could be made administratively, without legislation.

(c) CBPA

Require all agricultural land uses in counties covered by the CBPA (not just agricultural land in the resource protection and/or management areas) to comply with a minimum buffer requirement of 35 feet, and minimum conservation standards including development and implementation of soil conservation plans and Virginia certified NMPs. Currently, agricultural land in the resource protection area in production prior to passage of the CBPA does not have to comply with the buffer requirements. Also, the buffer requirements need to be updated with research conducted over the last two decades that indicates that a 35-foot buffer is the minimum buffer width necessary for sediment and nutrient reduction to surface waters.³² Last, we

³⁰ Commonwealth of Virginia. 2005. Review of land application of biosolids in Virginia. Report of the Joint Legislative Audit and Review Commission. House Document No. 89.

³¹ 9 VAC 25-630-10 et seq.

³² Richard Lowrance et al., *Evaluation of Coastal Plain Conservation Buffers using the Riparian Ecosystem Management Model*, J. Am. Water Resources Association 1445, 1445 (2001). See USDA NRCS, *Conservation Practice Standard: Riparian Forest Buffer 2* (Jan. 2006).

recommend that DCR support local governments in efforts to enforce provisions of the CBI dedicating staff to conduct random inspections using the same inspection protocols currently in place for the Virginia Agricultural Cost-Share Program. Violations should be reported to local governments for enforcement. Chesapeake Bay Act compliance measures should ensure that local governments are enforcing agricultural provisions of the CBPA.

(d) Virginia Nutrient Management Standards and Criteria

The USDA 2010 Report previously mentioned illustrates the importance of development and implementation of NMPs on cropland, and the lack of widespread implementation of previous recommendations (NMPs are either not developed or improperly implemented on more than 90 percent of cropland in the Bay watershed). This represents a two-fold loss for both water quality and farm profits. Proper implementation of NMP regulations avoids over-application of fertilizer, and prevents nutrient pollution.

As such, Virginia should place a strong emphasis on NMP development and implementation, requiring implementation on farms with more than 100 acres that receive nutrients by March 1, 2015. With respect to cropland, this would cover almost 90 percent of Virginia's harvested cropland and affect just over 5,000 Virginia farmers, many of whom are implementing certified nutrient management and soil erosion control plans to various degrees. Further, DCR and NRCS should work together to ensure that Virginia certified nutrient management planners understand that NMPs are living documents that will likely require revision on an annual, if not semi-annual, basis. Regular communication with their clients is essential to ensure that the plan is up-to-date and to address problems with implementation can be accomplished via training and scheduling cost-share payment reimbursement to plan that is tied to regular plan updating and consultation with farmers through the lifespan of the plan.

Additionally, CBF is also concerned that the phosphorus site index (P Index) is not sufficiently protective of water quality. While the P Index is a valuable tool in identifying regions at high risk for phosphorus loss, soil scientists that developed the P Index state in uncertain terms that the P Index is not an adequate tool to address regional imbalances in manure.³³ They strongly recommend that all producers be encouraged to apply manure at rates designed to meet plant uptake requirements and avoid over-application of phosphorus. They note that continued reliance on the P Index in areas where manure is produced in excess of needs is not sustainable in the long term, and will lead to an eventual build up of soil phosphorus to levels where no further phosphorus can be applied.

In light of that, CBF recommends that the Virginia Nutrient Management Standards and Criteria be modified to phase out the use of the P Index to justify over-application of phosphorus (beyond soil test recommendations) by 2017 for biosolids application and poultry litter, and

³³ Phosphorus indices to predict risk for phosphorus loss. Available online at: www.sera17.ext.vt.edu/Documents/P_Index_for_Risk_Assessment.pdf.

2025 for other livestock.³⁴ In the interim, plans developed for soils with high phosphorus should include a long-term strategy and proposed implementation timeline for reducing soil phosphorus to levels that protect water quality and allow for application of phosphorus at rates recommended by soil test results.

Soil scientists also recommend that state P Indices be correlated with local water quality requirements.³⁵ As such, the Virginia P Index should be recalibrated to take into account pollution reduction goals for P proposed in the Virginia Bay TMDL. Specifically, the minimum criteria for edge-of-field P runoff and leachate should be that nutrient concentrations in receiving waters not cause water quality impairment (algae, aquatic habitat, etc.). The tool should also identify those fields or situations where even with the best conservation, no additional P should be applied.

CBF is also concerned that threshold pre-screening procedures used in Virginia allow for application of phosphorus to soils already at risk for increased phosphorus loss to surface waters (for example, fields close to streams), without the benefit of running the P index to identify critical source areas where more intensive management is appropriate. Research indicates that risk for phosphorus loss in surface runoff and leaching begins to increase in soils that exceed a 20 to 30 percent degree of phosphorus saturation (DPS) threshold.³⁶ As such, CBF recommends that the P index should be used to determine phosphorus application rates for all soils that test greater than 20 percent DPS and for fields located within 150 feet of surface waters.

CBF also recommends that the Virginia Nutrient Management Standards and Criteria regulations be modified to include requirements to prevent erosion from exceeding the soil erosion tolerance level ("T"). The USDA 2010 Report emphasizes that "nutrient management practices need to be paired with erosion control practices to obtain net reductions in soluble nutrients." As such, NRCS is currently considering the addition to the NRCS Nutrient Management Code of general requirements that soil erosion rates not exceed the tolerance factor (Code 590) standard.³⁷ This approach makes sense because soil fertility, nutrient availability, and phosphorus transport are all directly related to soil erosion.

In addition, because nutrient transport to surface waters is strongly correlated with the distance from the field to surface water, we recommend that the Virginia Nutrient Management Standards and Criteria also include a requirement for riparian buffers of at least 35-feet in width that complies with NRCS standards for grass buffers or forested buffers (NRCS 391 Riparian Forest Buffer or NRCS Code 390 Riparian Herbaceous Cover Standard). Research has established that a 35-foot buffer is the minimum width necessary to provide surface runoff

³⁴ 4 VAC 5-15.

³⁵ SERA-17. November 2010. Revision of the 590 Nutrient Management Standards – SERA-17 Recommendations. Available online by November 12, 2010 at: http://www.sera17.ext.vt.edu/SERA_17_Publications.htm.

³⁶ Butler, J.S. and F. J. Coale. 2005. Phosphorus leaching in manure-amended Atlantic Coastal Plain soils. *J. Environ. Qual.* 34:370–381.

³⁷ USDA Natural Resources Conservation Services, 2010. Official First Review Draft, September 22, 2010, Conservation Practice Standard Nutrient Management Code 590.

remediation.³⁸ Forested buffers are particularly valuable and increase in-stream nitrogen processing by two-to-eight fold increase over contiguous riparian areas with grass buffers.³⁹ A mandatory buffer will effectively act as a setback for all forms of applied fertilizer. This would level the playing field for poultry litter, which has a mandatory 35 feet application setback from a stream if a permanent, vegetated buffer is established, or 100 feet otherwise. As such, it is appropriate to require fertilizer application setbacks as well as the establishment and maintenance of buffer areas to provide remediation of surface water runoff from fields receiving nutrients as an integral part of nutrient management planning in Virginia.

(3) Require livestock stream exclusion by 2017.

The proposed adoption rate of livestock stream exclusion on 95 percent of Virginia's pastures proposed in the draft WIP is unrealistic without a regulatory driver. State code should be revised to require the following:

- Require livestock stream exclusion by 2017 when local TMDL implementation plan lists bacteria, general benthic, sediment, nitrogen, or phosphorus list livestock as a causal factor in the impairment, and where livestock stream exclusion is required to achieve water quality goals; and
- Require livestock stream exclusion for farms with herd sizes greater than 20 cows between 2017 and 2025. This would apply to approximately 42 percent of cattle farms and result in exclusion of 94 percent of Virginia's cattle from streams.

Note that DCR distributed a draft piece of legislation to SAG members in August 2010 that included livestock exclusion requirements, but it was not included as part of the draft WIP.

(4) Create a safe harbor provision for Virginia farms by 2011.

The draft WIP proposes that a "resource management plan," as defined by NRCS, is deemed to be in compliance with the draft WIP and any associated law or regulation. First, it should be noted that this language does not suggest that compliance with the draft WIP is associated with implementation of the plan. The current language suggests that merely having a plan constitutes compliance. Further, it is also important to note that NRCS does not have a definition for the term "resource management plan."

While NRCS does have a number of definitions for various types of conservation plans, CBF has a concern that these lack the performance standards necessary for ensuring nutrient and sediment reductions. For example, the most basic conservation plan is simply a record of a farmer's decision and is required for all NRCS-funded practices. Any farmer who has received cost-share funding from NRCS has a conservation plan on file. The basic NRCS conserva-

³⁸ B.W. Sweeney, et. al., 2004. Riparian deforestation, stream narrowing, and loss of ecosystem services. In: Proceedings of the National Academy of Scientists, September 28, 2004.

³⁹ B.W. Sweeney, et. al., 2004. Riparian deforestation, stream narrowing, and loss of ecosystem services. In: Proceedings of the National Academy of Scientists, September 28, 2004.

plan could be written for one field out of twenty fields associated with the farm, and include a description of one BMP that the farmer has agreed to implement, out of a number of BMPs that might be recommended and necessary to protect water quality. Clearly, obtaining a conservation plan does not provide any assurance that appropriate BMPs are being implemented.

NRCS does offer more far-reaching conservation planning services, however, widespread implementation of more comprehensive conservation plans (such as a resource management system) can take several days (or longer) to develop for a whole farm, and would require a significant investment in staff.

While comprehensive conservation planning should be encouraged, given the logistics of developing plans for over 40,000 farms in Virginia, the more simplified approach outlined below will accomplish the dual goals of providing performance-based farm-specific planning tools and Bay TMDL compliance.

Agricultural producers in compliance with all the applicable planning and scheduled implementation requirements of the following could be deemed to be in compliance with the WIP:

- Applicable federal and state permits and laws;
- Implementation of a soil conservation plan that meets NRCS criteria that reduces soil erosion to at or below the soil loss tolerance level (T), as defined by NRCS, for each field on the farm;
- For crop, hay, or pasture land receiving nutrients, implementation of a NMP written by a certified Virginia nutrient management planner. When manure or poultry litter nutrients are used, this must include manure storage necessary to ensure appropriate timing of manure application as specified in the NMP;
- Establishment of a winter cover crop, either for production (Virginia Agricultural Cost-share practice SL-8H) or soil erosion protection and nutrient removal (Virginia Agricultural Cost-share practice SL-8 and SL-8B);
- Creating a permanent 35-foot vegetated (either grass or forest) riparian buffer that meets NRCS practice standards (NRCS 391 Riparian Forest Buffer or NRCS Code 390 Riparian Herbaceous Cover Standard);
- Livestock stream exclusion;
- Properly protected barnyards that employ BMPs necessary to prevent manure and runoff from confinement areas from entering streams and waterways.

In order for this safe harbor provision to be applicable, the state will need to develop some means of verifying that these BMPs are being properly implemented and maintained.

Note that it is important to clarify that implementing these provisions will secure producers with a safe harbor for Bay TMDL compliance only—there may also be local stream

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TMDLs that need to be addressed and as such, local governments may need to pass additional ordinances as may be necessary to protect local water quality.

(5) Expand enforcement of existing and proposed programs by 2011.

The Commonwealth should immediately expand enforcement of the existing agricultural programs described below in order to realize new pollution reductions.

(a) Animal Feeding Operations (AFOs) that discharge manure to surface waters are violation of state law.⁴⁰ DEQ has existing authority to address facilities violating this rule. Virginia should evaluate whether existing staff levels are sufficient to accomplish this goal. Staffing may need to be increased by two or three persons in high-density production areas Commonwealth, primarily the Shenandoah Valley. Increased enforcement of Virginia regulations will mean it will be less likely for EPA to intervene and expand coverage of the Concentrated Animal Feeding Operations (CAFO) Final rule⁴¹ to smaller facilities. It is in dairy industry's best interest to ensure Virginia takes control of correcting these problem facilities, as EPA has no flexibility with respect to CAFO rule enforcement, whereas Virginia has the option to allow for a case-by-case determination of the implementation schedule for corrective actions.

(b) Enforcement of proposed NMP recommendations, livestock exclusion, and CBF agricultural requirements should be conducted by DCR staff using the random spot-check approach currently used to verify Virginia Agricultural Cost-Share Program BMP implementation. This would assist local governments in enforcing agricultural provisions of the Bay Act and help to ensure enforcement is uniform across the region.

(c) Agricultural producers participating in environmental stewardship programs that include third party verification (using protocols approved by DCR) should be given the low priority for inspections.

(d) The Virginia Agricultural Stewardship Act (ASA) is currently under-utilized and under-staffed. With only one staff person, and investigation of complaints only when they are reported by the public, the ASA fails to achieve its potential. Specific limitations of the ASA include:

- The ASA is complaint driven and thus relies on members of the community to "turn their neighbor. Given the risk to an individual's standing in the community and fear of repercussions, understandably, people are reluctant to file a complaint, even where there are egregious water quality problems;

⁴⁰ 9 VAC 25-260-30.

⁴¹ U.S. Environmental Protection Agency. November 20, 2008. 40 CFR Parts 9, 122, and 412. Revised National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitation Guidelines for Concentrated Animal Feeding Operations in Response to the Waterkeeper Decision

- The ASA is not designed to handle issues such as over-application of manure because it is difficult to “prove” water pollution, even when it is clear that manure is being handled inappropriately; and
- Timelines for complying with a corrective action plan are too lenient—up to 18 months, with a possible six month (or longer) extension from the Commissioner.

The program is not sufficiently staffed or effectively utilized as a compliance measure, or as a deterrent. As such, CBF recommends the following changes to the ASA:

- Rather than requiring a report on a violation and a subsequent investigation, an ASA violation should be triggered automatically for failure to implement practices outlined in local TMDL implementation plans, failure to install riparian buffers of 35 feet or more, and for failure to implement NMP or livestock stream exclusion requirements;
- Staff levels should be increased;
- Timeline for implementation of the corrective action plan should be shortened, especially for egregious water quality problems and repeat offenders;
- A fine structure should be established in Code, rather than being left to the Commissioner’s discretion;
- A specific timeline for Virginia Department of Agriculture and Consumer Services (VDACS) investigations should be established to ensure that violations are addressed in a timely manner; and
- Owners of land rented to farmers should be held equally responsible for a violation and for ensuring the problem is addressed.

Note that farmers complying with the previously recommended Safe Harbor provisions would be exempt from additional requirements to meet Bay TMDL goals, but may have to implement practices necessary to protect local water quality. As such, they would not be exempt from ASA violations.

(6) Develop alternatives to land application of manures.

Hand in hand with expansion of existing regulatory programs and phasing out the over-application of manure phosphorus, we recommend that the Virginia WIP propose a strategy for increasing alternatives to land application, including clean technologies that convert manure to saleable fertilizer and/or renewable energy. With respect to manure-to-energy technologies, Virginia should pursue technologies that avoid simply transferring excess nutrients from water to air pollution. The fate of nitrogen associated with manure-to-energy technologies is particularly of interest, as nitrous oxide emissions often associated with converting manure or poultry litter to energy via thermochemical conversion technologies can also cause water pollution, as well as ozone formation. It is also important to consider that these approaches may require a public investment— particularly for dairy manure, which is not economically feasible to transport over long distances.

(7) Reduce ammonia emissions from animal feeding operations.

Virginia's WIP should also focus on reducing ammonia emissions from animal feed operations. Recent research indicates that the total ammonia emission rate for broilers including losses in-house, during storage, and following land application, is 0.07 pounds of TN per bird. Virginia produces approximately 241 million broilers each year (not including turkeys and hens), which could potentially release almost 17 million pounds of TN to the atmosphere. In the atmosphere, ammonia is subject to both wet and dry deposition and has been demonstrated to be a significant source of nitrogen pollution in coastal rivers and estuaries.⁴² Existing BMPs that reduce the loss of ammonia from poultry production should be fully utilized—particularly the use of poultry litter amendments at rates recommended for maximum ammonia gas reduction. Additionally, increasing implementation of ammonia-control technologies and BMPs including improved house design, feed management, and other approaches that reduce emissions and/or capture ammonia, should also be considered.

(8) Offsets for new growth.

For existing CAFOs, Virginia should assign a WLA for loads from (i) CAFO production areas, assuming standard BMPs are in place, and (ii) land-application areas, assuming a NMP is in place. Purchase of nutrient offsets should be required for any discharge from a CAFO in violation of a permit (i.e. runoff from a field where manure was applied inappropriately according to the NMP, where manure was applied without an NMP, or an unpermitted point source discharge from a production area).

For new and expanding CAFOs, complete offset for all loads from production areas and land application should be required. In other words, these operations do not get a "free" allocation for any discharge from properly managed production areas and NMP lands. However, because the aggregate loading from animal agriculture is not expected to grow significantly in the future, we support the concept of reserving "allocations" from any existing animal agricultural operations/acreage that are taken out of production for future use as offsets by existing CAFOs that expand, or new CAFOs that come on-line.

With respect to new or expanded loadings from other agricultural operations that may grow, such as turf farms or nurseries, DCR should develop an assessment by 2017 to determine whether growth is occurring in non-permitted agricultural operations and whether an offset requirement needs to be established. Alternatives to purchasing offsets could be the installation of BMPs necessary to reduce nutrient and sediment runoff to baseline pre-development levels.

⁴² P. Moore Jr., et al. 2010. Ammonia emissions factors from broiler litter in barns, storage, and after land application. *Journal of Environmental Quality*, published online August 9, 2010.

⁴³ A. Aneja, et al. 2008. Ammonia emissions from agriculture-U.S. status and needs. *Journal of Environmental Quality*, 37:515-520.

Conclusion

Full implementation of these recommendations will provide the level of reasonable assurance needed to achieve pollution reductions from this source sector in the revised pollution allocations based on a Level 3 level of effort included in Section IV. These recommendations recognize the agricultural community's desire for clear expectations and commitment to widespread adoption of basic BMPs in a manner that avoids a one-size-fits-all approach.

Absent adoption of these recommendations or other similar approaches that will provide assurance that agricultural sector goals will be met, CBF recommends lowering the pollution reduction expectations for the agricultural sector, and increasing pollution reduction expectations for the WWTP source sector.

III. Stormwater

Background

Virginia has developed numerous programs to address discharges of runoff from urban and suburban lands and industry (collectively "urban runoff") to surface waters. The Virginia Erosion and Sediment Control Law, Erosion and Sediment Control Regulations, and Erosion and Sediment Control Certification Regulations arose beginning in the 1970s to control the discharge of pollution from active land-disturbing activities.^{44,45,46} The pollutants of concern in urban runoff include sediment, nutrients, and other pollutants, as well as, the peak flow rate, volume, and timing of runoff. The Virginia Stormwater Management Act, Virginia Stormwater Management Permit Regulations (VSMP), and the CBPA and Regulations came about in the 1990s to control the discharge of these same pollutants from active and finished private development (or "post-construction" activities), municipal separate storm sewer systems (MS4s), and industrial activities.^{47,48,49,50} Virginia issues VPDES individual or general permits to these categories of discharges. Urban runoff from private active and post-construction activities are covered under the five-year Construction General Permit, discharges from MS4s are covered by individual permits (larger "Phase 1" communities) or a five-year general permit (smaller "Phase 2" communities), and industrial releases are covered by a five-year general permit.^{51,52,53} Lastly, the Code provides some authority under local planning, subdivision, and zoning programs to take actions that impact urban runoff.

⁴⁴ Va. Code §10.1-560.

⁴⁵ 4 VAC 50-30.

⁴⁶ 4 VAC 50-50.

⁴⁷ Va. Code §10.1-603.1.

⁴⁸ 4 VAC 50-60.

⁴⁹ Va. Code §10.1-2199 et. seq.

⁵⁰ 9 VAC 10-20.

⁵¹ 4 VAC 50-60-1100 et. seq. (July 1, 2009).

⁵² 4 VAC 50-60-1200 et seq. (July 8, 2008).

⁵³ 9 VAC 25-151 - General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity. July 1, 2009.

Despite the program capacity already in place to address this pollution source sector urban runoff has become a principle reason that thousands of river miles across the state and entire Bay remain polluted. Statewide, 1,570 stream miles are impaired because of urban runoff.⁵⁴ Many urban and suburban streams are falling apart, subject to hazardous flooding, clogged by sediment and trash, and/or are largely devoid of native aquatic life. These streams help make up the 100,000 streams that feed the Bay. Urban runoff is responsible for ten percent of the TN, 17 percent of the phosphorus, and 15 percent of the sediment that pollutes the Bay's rivers.^{55,56} Reports from EPA and the U.S. Geological Survey have concluded that efforts to clean the Bay are losing ground specifically because progress reducing pollution from other source sectors is being offset by increased urban runoff pollution.^{57,58} While the existing program capacity, proactive dischargers, and new technologies helped reduce pollution from individual sites since between 1985 and 2005, the sheer pace at which farms and forests were converted to development has caused the "aggregate" pollutant loading over this same period to increase by 16 percent.⁵⁹ It is this total pollutant loading that fuels impairment of the Bay; the Bay is facing significant problems moving forward if this pollution source sector is not arrested.⁶⁰

Draft WIP

The draft WIP proposes extremely aggressive allocations for this pollution source sector. As noted earlier, the Commonwealth calculated reductions for each pollution source sector to meet "E3" treatment and two levels of greatly enhanced treatment that are less stringent than E3. For urban runoff, Level 2 called for retrofit of 20-25 percent of impervious surfaces and 20 percent of pervious surfaces, while Level 3 included retrofit of 40-50 percent of impervious and 20 percent of pervious.⁶² E3 would involve retrofit of 100 percent of existing urban lands. The urban runoff

⁵⁴ L. Lutz. 2009. Get the Dirt Out effort works to get construction sites to clean up their acts—Program trains citizens to recognize and report violations of sediment control regulations. Bay Journal. January 2009.

⁵⁵ Commonwealth of Virginia. 2010. Spreadsheet provided to the Virginia WIP SAG titled, *VA Basin Loads—Nitrogen and Phosphorus [Million Pounds/Year]*.

⁵⁶ EPA Chesapeake Bay Program, Watershed Model progress run spreadsheet, July 30, 2010.

⁵⁷ U.S. EPA Office of Inspector General. 2007. Evaluation Report: Development Growth Outpacing Progress Watershed Efforts to Restore the Chesapeake Bay. Report No. 2007-P-00031, September 10, 2007.

⁵⁸ U.S. Geological Survey. 2007. *Synthesis of U.S. Geological Survey Science for the Chesapeake Bay Ecosystem and Implications for Environmental Management—Summary of Findings and Management Implications*. Circular 1316.

⁵⁹ U.S. EPA Office of Inspector General. 2007. Evaluation Report: Development Growth Outpacing Progress Watershed Efforts to Restore the Chesapeake Bay. Report No. 2007-P-00031, September 10, 2007.

⁶⁰ Virginia Secretary of Natural Resources. January 2005. Commonwealth of Virginia, *Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy*.

⁶¹ Commonwealth of Virginia. 2010. *Virginia's Watershed Implementation Plan: Background, Approach and Summary of Proposed Actions Discussion Draft, 8/24/2010*. This document was distributed at the last SAG meeting before release of the draft WIP. It proposed levels of treatment and corresponding actions for the main source sectors. The levels of treatment corresponded to a scoping spreadsheet distributed to the SAG that described current and TP current reduction progress, allocations consistent with an "everything, everywhere, by everyone" or Level 1 of treatment, and allocations consistent with two lesser treatment levels, termed Level 2 and Level 3.

⁶² Commonwealth of Virginia. 2010. Presentation provided to Virginia WIP SAG titled, *Virginia's Chesapeake River Basins—2009 Progress, L2, L3, and Draft Allocations Loads*. July 16, 2010.

allocations for the James, Rappahannock, and York River basins are set at “E3.” Specifically, for TN, the James and Rappahannock were set based on E3, and for TP, the James and York were set based on E3. The urban allocations for TN in the Potomac and York and for TP in the Rappahannock are also aggressive, set to be more stringent than Level 3 (“Level 3+”). The remaining three basin/pollutant combinations are set at Level 3.

As discussed at the outset of this section, it is clear that Virginia’s existing urban runoff programs have so far been incapable of arresting stormwater’s growing impact on the Bay. With that said, these programs are in no way sufficient to achieve the E3 level of treatment posited in the draft WIP. Frankly, we find it unlikely that *any* combination of mandates, funding, and incentives could provide reasonable assurance for achieving E3 levels of implementation from this sector. The sheer cost, legal barriers, and logistics involved make E3 completely unrealistic at the basin-level.

We also feel strongly that existing programs cannot provide reasonable assurance that a level of increased BMP implementation can be achieved that will deliver reductions in pollution from this sector. Outdated provisions in the state erosion and sediment control, CBPA, and urban runoff programs, and the lack of numeric pollution reduction requirements and deadlines to meet water quality standards in existing VPDES permits issued to Phase 1 and 2 MS4 communities, private development industry supports our position. Further, there are no public funding programs in place to provide the financial assistance needed to retrofit existing urbanized lands. A growing number of proactive communities that have adopted local stormwater fees are ahead of the game, but they do not begin to collect monies to cover the cost to meet existing or proposed retrofit goals.⁶³ The draft WIP does not commit to any new program capacity to address these deficiencies, instead indicating the Commonwealth will “consider” or “investigate” a list of new authorities, regulations, and funding mechanisms to meet the proposed allocations. While the draft WIP did describe in general some potentially viable strategies to fill gaps, none were fleshed out with details and analysis that demonstrates a strong obligation to pursue them. Any thought that additional reductions from this sector can be realized through the NCE, without first establishing mandates that urban runoff dischargers improve their performance by a deadline, is unrealistic. Further discussion of an expanded NCE is included later in this section.

Some new programs may be on the horizon to address future growth from this sector. A proposed revision to the VSMP regulations for discharges of post-construction stormwater from private development created over a nearly a four-year period were finalized at the close of the Kaine Administration in 2009. In short, these regulations would have required new development to achieve the average treated predevelopment pollution loading from the farm and forest lands it replaced (equated to a TP criterion of 0.28 pounds/acre/year). The regulations were subsequently suspended in January 2010 and are being reevaluated by the Commonwealth to address concerns that they were technically flawed and too costly to developers.⁶⁴ However, the draft WIP includes this very same requirement as the “Tier 1 load balancing approach” stating that new development

⁶³ Some communities with stormwater utilities in place include Alexandria, Prince William County, Richmond, Newport News, Hampton, Suffolk, Portsmouth, Chesapeake, Norfolk, and Virginia Beach.

⁶⁴ www.townhall.state.va.us/L/ViewStage.cfm?stageid=5397.

will be held to a post-development load that “produces a no net increase from the average for cropland, pasture, and hay loads after treatment with the suite of agriculture and forest BMI previously identified in this WIP.”⁶⁵ In fact, based on Virginia’s own chosen source sector allocations, the draft WIP anticipates a TP criterion of 0.26 pounds/acre/year, which is more stringent than the criterion in the suspended regulations.⁶⁶ While CBF strongly supported the approach through the development of the proposed post-construction regulations, we are uncertain whether to take this provision seriously based on the McDonnell Administration’s support of suspension of the regulations. These regulations must *actually* be promulgated for the Commonwealth to claim this program as a means to provide reasonable assurance that the requirements of the TMDL will be met.

The Commonwealth’s Tier 2 load-balancing approach in the draft WIP “will allow for accounting of existing programs and practices on the ground that are currently either inadequately tracked or not tracked at all.”⁶⁷ Assuming that this means that Virginia will improve enforcement and tracking of pollution reductions obtained from existing programs, CBF strongly supports this action.

Lastly, CBF supports the Commonwealth’s plan to require federal facilities to manage existing and new stormwater discharges consistent with Presidential Executive Order 13508, Energy Independence and Security Act of 2007, and the Clean Water Act.^{68,69}

Recommendations

In the forthcoming pages CBF offers **seven** specific revisions to the draft WIP that help provide a high level of reasonable assurance that the revised pollution allocations for the urban runoff sector in Section IV can be met. Note that these allocations are set based on a 2 effort included in the August 24, 2010 SAG discussion draft.

(1) Establish a new state program to fund the retrofit of existing developed lands by 2015

The Commonwealth and every state, locality, homeowners association (HOA), and commercial development in the nation, is facing the significant challenge of how to pay for capital projects and ongoing maintenance programs to address the pollution discharged by existing urban and suburban landscape. Further complicating this task is that many lands were developed prior to any requirements to address the quantity and quality of stormwater. Also, HOAs that own many urban runoff practices on private lands are loosely organized and have little funding options, short of association fees that usually only cover routine maintenance that.

⁶⁵ See draft WIP, note 1, page 74.

⁶⁶ Calculated using the equation draft WIP agricultural TP allocation + draft WIP forest allocation/total agricultural acres in Virginia Bay watershed + total forest acres in Virginia Bay watershed: 2,146,000 lbs + 1,090,000 lbs / 2,817,000 acres + 13,928,000 acres = 0.26 TP lbs/acre.

⁶⁷ See draft WIP, page 77.

⁶⁸ See Executive Order 13508.

⁶⁹ Pub.L. 110-140.

Potential actions, generally called “urban retrofits,” could include the upgrade and repair of existing flood control infrastructure, upgrade of stormwater BMPs, disconnection or replacement of impervious surfaces, installation of practices for water reuse, and restoration and protection of urban streams. The retrofit concept is not defined in the draft WIP and is viewed differently across stormwater practitioners and regulators. For the Virginia WIP, we suggest defining the “retrofit of an acre of urban land” as the installation and maintenance of actions that reduce nutrient pollution to the maximum extent practicable from that acre of land.

These types of efforts, particularly the “core” public works needs, are already ongoing, planned, or needed in most urbanized areas of the state in order to comply with TMDLs on local waterways, meet MS4 or Combined Sewer Overflow (CSO) Long-Term Control (LTCP) requirements, prevent hazardous flooding and property damage after heavy rains, protect drinking water supplies, and to generally improve the livability of their communities. Bay TMDL or not, these actions will, and must, take place eventually. In many cases, full implementation of work that is already mandated or locally essential for local rivers, creeks, and streams should be more than enough to protect the Bay downstream. Where Bay requirements necessitate actions beyond those that are locally driven, the NCE and other incentives can be used to reduce the costs of this work. However, we reject the premise that most local and Bay-related urban runoff infrastructure improvement needs can be avoided by an expansion of the NCE.

There is no question that there will be significant costs to address this problem. History has proven that the cost of public infrastructure projects only increases with time. For example, communities that chose to pursue full or partial separation of old CSO systems 20 years ago surely saved hundreds of millions of dollars, compared to cities that are pursuing CSO work today. The tributary strategy listed the costs to meet requirements for the urban sector at \$7.5 billion.⁷⁰ Note that this also includes costs for the installation of stormwater BMPs for new development activities that will be absorbed by developers and builders, and skews high in our opinion because lower cost non-structural practices that reduce stormwater volume were not fully considered in the estimate. Regardless, it could cost billions to retrofit and maintain urban lands in a manner that protects local waters and the Bay.

Thus, the Commonwealth must immediately pursue (i) an appropriate mechanism to deliver funding and incentives to the localities, homeowners, and private lands that pursue retrofits on existing developed lands, and (ii) a dependable source of funding to cover capital and maintenance costs for these retrofits.

We suggest a revision to the Code that creates an urban retrofit funding program to distribute monies. This program should only fund a relatively short list of proven practices that “capture” runoff on-site through infiltration, evapotranspiration, and reuse, thereby reducing pollution and augmenting and protecting existing drinking water sources. Eligible “green infrastructure” practices could include urban tree cover, rainwater harvesting and reuse systems, disconnection of impervious surfaces, pervious pavement installation (green alleys, sidewalks),

⁷⁰ See tributary strategies, page 69.

rain gardens, swales, bioretention, green roofs, and targeted pond and filtration retrofits that support improved infiltration. New installation of stormwater ponds for storage, paved channels and other infrastructure specifically designed for flood control that have limited ability to remove nutrients or protect drinking water should not be included. The program should include both a cost-share component for localities and HOAs (similar to that in place now for WWTP upgrades and agricultural BMPs) and a tax credit component for existing commercial and industrial landowners.

Such a program should use a sliding-scale to determine cost-share amounts, with a percentage provided for those that pursue projects the soonest, those that are closest to waterways, and/or those that would provide the greatest pollution reductions. Eligibility requirements should also apply, including provision of a specified match (obtained via stormwater fee or other sources) by localities or HOAs and maximum utilization of “non-structural” practices (indicated in existing MS4 and industrial stormwater permits) by commercial and industrial lands.

Such an innovative fund will be of little use if it not adequately funded. Therefore, Commonwealth must make a real, long-term commitment to address this problem now, before the costs ascend further. A consistent source of funding via an appropriate tax or fee is best to assist with long-term planning by potential fund users, while budget-to-budget allocations to the General Fund, the approach used for WWTP and agricultural funding, is a workable, but less desirable option. Additionally, CBF believes strongly that the federal government must play a significant role in funding this work, perhaps mimicking the approach used to fund thousands of WWTP upgrades nationwide after passage of the CWA. Further, CBF has spent more than a year actively supporting the Chesapeake Clean Water Act, which would provide \$2.5 billion for these types of stormwater retrofits Bay watershed-wide.⁷¹ Whether through this proposed legislation, targeted allocations to states from EPA via the State Revolving Loan Fund (SRLF), or another funding instrument, we are committed to working with the U.S. Congress and EPA to dramatically increase funding for stormwater retrofits.

Three law changes and new permits would be needed to support this program. The urban retrofit program would need to be created within the WQIF, Virginia Clean Water Revolving Loan Program, or as a new section of code. To facilitate this new program, and ensure access to stormwater funding that may be available through the federal SRLF in the future, the code would need to be changed to allow funding of stormwater projects under the Virginia Clean Water Revolving Loan Program (VCWRLF). As currently written the VCWRLF is limited to funding only WWTP, agricultural, Brownfields, and land conservation projects.⁷² Also, the existing NCE provisions in the code would need to be amended to properly integrate urban runoff to meet Bay-related goals in a manner that protects local water quality. And lastly, VDPES regulations and/or permits that cover existing developed lands would need to be amended to include a specific retrofit mandate, as discussed further in the next recommendation.

⁷¹ S. 1816: Chesapeake Clean Water and Ecosystem Restoration Act (Cardin).

⁷² www.vra.state.va.us/cleanwater.shtml.

Funding the control of stormwater pollution from existing developed lands will not be cheap. But the Commonwealth can begin to heal its urban streams, ensure existing urban lands do their part to clean the Bay, and save billions of dollars in the long-term by facing up to the problem now and establishing a strong and sustainable program for completing this important work.

(2) Establish aggressive, yet feasible, retrofit mandates in MS4 permits by 2012.

The Commonwealth should revise and reissue by 2012 the currently administratively continued individual MS4 permits for the 11 Phase 1 communities and revise the existing general MS4 permit for Phase 2 communities to include binding retrofit requirements. The permits should mandate a Level 2 level of treatment of MS4 acreage by 2025. This is the same level of treatment proposed by the Commonwealth in the August 24, 2010 discussion draft. This would require retrofit of 25 percent of high intensity impervious land (1.6 percent per year), 20 percent of low intensity land (1.3 percent per year), 10 percent of high intensity pervious land (0.67 percent per year), and 10 percent (0.67 percent per year) of low intensity pervious land. Note that we suspect that if implemented, urban turf fertilization restrictions recommended below will assist with achievement of the pervious lands goals.

Employing the NCE to assist compliance can be appropriate, provided trading is used to meet a binding limit included in the permit and trading does not result in local water quality impairments. If limits are set at such a stringent level that the limits can only realistically be achieved through acquisition of credits, there must be a demonstration by the discharger and/or the Commonwealth in developing the program that adequate credits are available to meet the need. Requiring confirmation up front that credits are available and under an exchange contract during the permit renewal process, similar to the permitting approach for wetlands mitigation, is a potential means to provide surety that anticipated reductions will be achieved. In regions where a comprehensive watershed plan is in place, equivalent reductions within the same watershed that meet other mandates and goals of the Bay TMDL, should be allowed. Lastly, the total nutrient reductions to meet these mandates over the 15-year WIP period should be used to set WLAs for each MS4 community, and these WLAs should be included in the Phase 1 individual permit or in a registration list (or equivalent) for the Phase 2 general permit.

(3) Restrict the sale and application of fertilizer to turfgrass statewide beginning in 2012.

Turf coverage in the Bay watershed ranges from 2.1 to 3.8 million acres, or 5.3 percent to 9.5 percent of total Bay watershed area, and roughly 75 percent of this turf cover is potentially devoted to home lawns.⁷³ This same study estimated that turf acreage in Virginia, which stood at 1,100,000 acres in 2001, has grown faster than population or impervious cover in the last three decades, with an annual growth rate of 8.6 percent.⁷⁴ As of 2004, 62 percent of turf acreage in

⁷³ Schueler, T. 2010. CSN Technical Bulletin No. 8—The Clipping Point: Turf Cover Estimates for the Chesapeake Bay Watershed and Management Implications. Chesapeake Stormwater Network.

⁷⁴ Id.

Virginia was home lawns.⁷⁵ Turf grass is now the largest crop grown in the Bay watershed, even represents the single largest irrigated crop in the U.S.^{76,77} Between July 1, 2008 and June 30, 2009, fertilizer for non-agricultural use represented 41 percent by weight of that sold in Commonwealth.⁷⁸ The remaining 59 percent is applied to agricultural lands. We estimate that non-agricultural fertilizers represent approximately nine percent of the TN and ten percent of TP applied as fertilizer in Virginia.⁷⁹ A significant amount of fertilizer is applied by homeowners who do not have expertise in nutrient management planning or turf management. All told, the misapplication of these fertilizer nutrients to urban lawns can result in significant pollution of waterways in urban areas.

Thankfully, there are some common-sense, cost-effective approaches to improving management of turf fertilizer that minimizes pollution, assists compliance with local TMDL MS4 permits, and ordinances, and helps maintain healthy grass cover.

(a) Contract application of TN and TP to turfgrass.

About 20 percent of turf lands in Virginia (about 200,000 acres) receive fertilizer from private contract applicators.⁸⁰ Currently about 10 percent of these acres are enrolled in a voluntary DCR program that promotes NMP practices.⁸¹ VDACS is currently in the process of revising its regulations and recommending Code revisions for the contract application of fertilizer to turfgrass.⁸² Below we describe our suggestions for revising these regulations. A more detailed explanation of these recommendations was included in written comments submitted to VDACS in October 2010.⁸³

Training. CBF supports VDACS proposal in the revised regulations to require contract applicators to receive training and certification to ensure that nutrients are applied in accordance with provisions for turfgrass in the Virginia Nutrient Management Standards and Criteria.

⁷⁵ Id.

⁷⁶ Id.

⁷⁷ Milessi, C.S. et al. 2005. Mapping and modeling the biogeochemical cycling of turf grasses in the United States. *Environmental Management*. 36(3): 426-438.

⁷⁸ Commonwealth of Virginia. 2009. Total Fertilizer Summary Uniform Fertilizer Tonnage Report from July to June, 2009.

⁷⁹ Assume 20 percent nitrogen and 25 percent phosphorus content for farm and non-farm multi-nutrient fertilizer (Based on *The Fertilizer Encyclopedia*, by V. Gowariker et al., Copyright 2009 by John Wiley & Sons, Inc.) average nitrogen and phosphorus content in lawn fertilizer (20 percent, and 5 percent, respectively from average both turf starter and turf maintenance fertilizer blends). Also assumes that organic fertilizer sold has same nitrogen and phosphorus concentration as dry poultry litter, per Virginia Nutrient Management Standards and Criteria.

⁸⁰ Estimate from DCR staff.

⁸¹ Id.

⁸² Chapter 36 of Title 3.2 of the Code of Virginia.

⁸³ Letter to Erin Williams, Policy & Planning Coordinator, VDACS from Kristen Hughes Evans, CBF, October 2010.

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Reporting. As currently proposed by VDACS, accounting of nutrient management acres will rely on the voluntary program managed by DCR. We strongly recommend mandatory annual reporting to the state that includes TN and TP applied, total acreage receiving these nutrients (by county or city), and total acreage receiving these nutrients in accordance with nutrient management criteria requirements. This type of basic, aggregate data is already collected by applicators and its submission to VDACS once a year will not be overly burdensome or elicit business privacy concerns. Voluntary reporting is inappropriate for a regulatory program, particularly one that is assisting with implementation of the Bay TMDL, MS4 permits, and other local water quality directives. Collection of this data will also allow Virginia and localities to get proper credit under the Bay TMDL and other TMDLs for urban runoff. A proper accounting of these actions has the potential to reduce the need for more expensive urban retrofits and address the concerns raised in the draft WIP and amongst stakeholders that on-the-ground BMPs are not being adequately counted. Simply put, Virginia and EPA cannot obtain an accurate count of actions if they are not efficiently reported.

Enforcement. Contract applicators that fail to comply with nutrient management requirements should face significant financial disincentives, including a substantial fine as well as loss of license and individual applicator certification. Fines for failure to comply should at least double the estimated cost of complying (i.e. the cost of training courses for staff).

Labeling. Labeling of lawn fertilizer sold in Virginia should have clear language advising consumers on how to use the product appropriately to achieve desired results and avoid pollution of surface waters. The currently proposed language is insufficient. Specifically, CBF recommends the inclusion of language compatible with Florida's labeling requirements for fertilizer sold at retail. The Florida law states that the following language shall appear conspicuously on bags of fertilizer sold at retail:

"Do not apply near water, storm drains or drainage ditches. Do not apply if heavy rain is expected. Apply this product only to your lawn/garden, and sweep any product that lands on the driveway, sidewalk, or street, back onto your lawn/garden."

Given that we do expect frozen soils in Virginia and know that some homeowners do use fertilizer as a de-icer, we would recommend that the second sentence be modified to read:

"Do not apply to frozen or saturated ground, or if heavy rain is expected Do not use this product as a de-icer."

A final version of the VDACS regulations consistent with these ideas, and appropriate Code changes, are needed to accomplish these recommendations.

(b) Sale and application of TP fertilizer for lawn maintenance.

A recent report by Virginia Tech researchers evaluated several management approaches to reducing TN and TP runoff from fertilized urban acreage.⁸⁴ The reports' key conclusions were that the implementation of a wide range of fertilizer management practices and policies could significantly reduce runoff of TN and TP, and that by carefully restricting application rates, TN loss in urban runoff from well-managed turfgrass will be minimal. The authors recommended a range of approaches that are estimated to reduce annual TN and TP pollution to surface waters in Virginia by **454,646** and **123,655** pounds, respectively.

Based on the results of this and other studies, the existence of similar programs in at least ten other states already, CBF supports a new program to restrict the sale and application of fertilizer that includes the following components that are consistent with the Virginia Tech study:⁸⁵

- Establish point-of-sale restriction on lawn fertilizer that contains TP for lawn maintenance. Most well-established home lawns and landscapes will not be soil phosphorus limited, but exceptions would be needed for "new ground" seedings, at construction sites, or critical renovation areas in home lawns where soil test validate actual phosphorus deficiency. Requirements for signage and point-of-sale education should also be included.
- Establish a point-of-sale requirement for lawn fertilizer that it must contain at least 50 percent slow-release TN. Guidance should be provided regarding the benefits of on and annual applications. Many manufacturers already combine quick and slow release sources of TN to take advantage of both strengths. The quick release source provides quick green-up but is at a sufficiently low rate to prevent salt injury or reduce the potential for leaching. The slow release source is available to provide a greening effect for a longer duration.
- Prohibit contract applicators from applying TP to established lawns without a soil test and require compliance with strict annual and one-time TN application in accordance with Virginia Nutrient Management Standards and Regulations for turfgrass management.
- Bar application of fertilizer on sidewalks, driveways, or other paved surfaces.
- Establish appropriate seasonal application restrictions to prevent application to frozen ground.
- Create appropriate exemptions for organic sources of TN in fertilizer.

Implementation of this recommendation would require passage of a new statewide law. An appropriate phase-in period through 2012 would be appropriate for the TP provisions,

⁸⁴ Virginia Tech. 2010. *Effect of Fertilizer Management Practices on Urban Runoff Water Quality*.

⁸⁵ State-wide or local programs that restrict the use of lawn fertilizer are in place in Minnesota, Michigan, Missouri, Illinois, Florida, Wisconsin, Maine, New York, and New Jersey.

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perhaps a longer period for the slow-release TN requirement. Take note that DCR distributed a draft piece of legislation to SAG members in August 2010 that included very similar requirements, but it was not included part of the draft WIP.

(4) Make several improvements to the Virginia Erosion and Sediment Control Program.

The Commonwealth should pursue two common-sense improvements to Virginia's Erosion and Sediment Control programs that have the potential to deliver reductions in nutrient and sediment pollution.

First, Virginia should require that sites be at least temporarily stabilized within three days of site disturbance, rather than seven days as currently allowed by the Erosion and Sediment Control regulations. Shortening the time sites may remain destabilized will reduce the chance that sudden rain events will wash sediment, nutrient, and high runoff volumes from the sites. Virginia should also expeditiously revise the regulations and associated guidance to ensure they are consistent with the federal effluent limitations guidelines (ELGs) for the construction and development industry when they are finalized.⁸⁶

Next, nutrient management on active construction sites should be consistent with DCR's "Technical Bulletin No. 4—Nutrient Management for Development Sites."⁸⁷ This bulletin advocates application of 50 percent of the TN that is presently recommended in the 1992 *Virginia Erosion & Sediment Control Handbook* for permanent vegetative stabilization on construction sites. Based on more recent nutrient management science, the recommended amount of TN is excessive. This could provide significant TN reductions through 2025.

In order to achieve these pollution reductions, revision and reissuance of the Construction General Permit and revision of state regulations will be necessary. We suggest that this action take place as soon as the currently suspended ELGs are finalized by EPA.

(5) Initiate an intensive education campaign on citizen education to reduce stormwater pollution.

The Commonwealth should promptly begin a statewide media campaign to educate citizens about steps they can take to reduce urban runoff. The campaign should use television and other new media that maximizes reach into the community. The focus should be on simple actions that reduce urban runoff, protect drinking water, and save people money. Such a campaign has the potential to provide immediate reductions in pollution from changes in citizen behavior, and future reductions indirectly by building citizen support for water quality programs. **Table 4** suggests ten actions to consider for such a campaign.

⁸⁶ 74 FR 62996. December 1, 2009.

⁸⁷ DCR. 2003. *Technical Bulletin No. 4 - Nutrient Management for Development Sites*.

Table 4—Ten Things Citizens Can Do to Prevent Stormwater Pollution and Save Money

1. Limit use of fertilizer.	6. Never dump anything down the drain.
2. Use native plants.	7. Perform environmentally-friendly car care.
3. Pick up trash.	8. Pick up after your pet.
4. Keep water away from pavement.	9. Drive less.
5. Compost yard waste.	10. Become active in your community.

(6) *Require no net increase in post development pollution loads from new development 2012.*

Virginia should promulgate new regulations for post-construction stormwater that provide a no net increase in TN and TP loadings from the average predevelopment condition ensure that all nutrient loads from new development are fully offset. The draft WIP indicates willingness to finalize these regulations. Moving toward 2025, the state should require that development achieve a no net increase from the forested condition, either on-site or through acquisition of offsets.

(7) *Establish regulations and incentives that promote redevelopment and sound land use*

The Commonwealth should take the following steps to reduce pollution from existing future developments. Virginia should promulgate the new regulations for post-construction stormwater that require a 20 percent reduction in TN and TP from redeveloped lands. The WIP indicates a willingness to finalize these regulations.

Studies indicate that high density development provides less stormwater pollution per capita than low density greenfield development.^{88,89,90} We suggest that Virginia create incentives for redevelopment of existing urban corridors and projects in planned growth areas that include specific sound land use elements, such as supporting higher density, compact development transit-oriented design, multiple uses, and/or increased open space, buffers, or tree canopy that are permanently protected. Incentives could include tax reductions, density bonuses, parking waivers, fee reductions, and rapid project approval. Some local governments already provide a mix of incentives for certain actions. Incentives should only apply to projects that are in approved urban development areas (UDAs), are compliant with the CBPA (if applicable) and are consistent with the local comprehensive plans.

⁸⁸ EPA. 2004. *Protecting Water Resources with Smart Growth*. EPA 231-R-04-002, May 2004.

⁸⁹ EPA. 2005. *Using Smart Growth Techniques as Stormwater Best Management Practices*. EPA 231-B-05-001, December 2005.

⁹⁰ EPA. 2006. *Protecting Water Resources with Higher-Density Development*. EPA 231-R-06, January 2006.

Conclusions

CBF concludes that full implementation of these recommendations will provide the level of reasonable assurance needed to achieve pollution reductions from this source sector in the revised pollution allocations based on Level 2 included in Section IV.

IV. Onsite Wastewater Systems

Background

Conventional on-site sewage systems and alternative onsite septic systems (AOSS) are installed in Virginia. AOSS systems overcome drainfield area and other site limitations that preclude the use of conventional systems. Approximately 536,200 systems are located in the Virginia Bay watershed, with 11,000 new systems added each year (10 percent are AOSS). The Code, the Sewage Handling and Disposal Regulations, and Emergency Regulations for Alternative Onsite Systems govern these systems.^{91,92,93} EPA and the Commonwealth assume these systems retain all TP onsite. The Code provides authority for the Virginia Department of Health (VDH) to set TN limits on AOSS, but not for conventional systems. The existing AOSS regulations require large systems (greater than 1,000 GPD) to meet a five mg/TN limit. It has been VDH's policy for years to require compliance with the drinking water standard of ten mg/L nitrate-N in groundwater for all systems using mass drainfields (greater than 1,200 GPD). Note that dilution, not necessarily treatment, may be used to meet these TN limits. VDH does not administer funding programs for conventional or AOSS systems, although the code authorizes a betterment loan program to repair and or upgrade existing systems. The CWRLF, WQIF, and other programs sometimes provide grant funds for upgrades.

Even though programs are in place to address TN from new large AOSS, the sheer number of new conventional systems—many using 100-year old technology—will result in the total TN pollution from this source sector to continue to increase with growth. While onsite systems in Virginia only provide about four percent of TN load to the Bay, clusters of outdated or failing systems can pollute groundwater used for drinking water and nearby surface waters, such as poorly flushing creeks, embayments, and coves. The draft WIP indicated that, “VDH is beginning to see an increase in the number of applications for larger onsite systems in the Chesapeake Bay Watershed, but it is difficult to determine the trend.”⁹⁴ It is reasonable to conclude that the advent of new AOSS technologies that overcome conditions that ruled out conventional systems is driving this trend.

⁹¹ Va. Code §32.1, Chapter 6.

⁹² 12 VAC 5-610.

⁹³ 12 VAC 5-613.

⁹⁴ See draft WIP, page 87.

Draft WIP

The onsite system source sector portion of the draft WIP provides a well-written and direct overview of the challenges faced by this sector. Like stormwater, the draft WIP proposes a TN allocation based on an E3 level of treatment for this sector in the James River basin. The remaining TN allocations are at Level 2, which is the same level of treatment in the August 2010 discussion draft. TP allocations are not provided to this sector.

The draft WIP acknowledges that existing onsite programs will not be able to reduce discharges to the Bay. Similar to our stormwater comments, there is absolutely no way that a level of treatment can be achieved in the James River basin. Further, while the allocations are set based on Level 2 treatment and the draft WIP *describes* the new program capacity present in the scooping scenario as necessary to meet Level 2 (installation of TN removal, septic pump-outs), like the other NPS sectors, there was no *commitment* to pursue necessary new program capacity needed to support the effort. However, the draft WIP does indicate that new pending regulations for AOSS will propose the inclusion of TN limits for small AOSS systems (less than 1,000, mostly single family homes), elimination of the dilution option for compliance by large systems, and more stringent design standards for placement in sensitive areas. Lastly, there is no commitment to pursue new funding to upgrade existing systems, nor is there a specific plan to institute offset requirements to address pollution from new systems. Taken in total, the existing programs and draft WIP do not provide reasonable assurance that the proposed allocations can be met.

Recommendations

We offer the following **six** specific revisions to the draft WIP that will help provide a high level of reasonable assurance that the revised pollution allocations for the onsite sector in Section IV can be met. Note that these revised allocations are set based on a Level 2 level of effort included in the August 24, 2010 discussion draft.

- (1) *Require existing septic systems within sensitive areas to install best available technology for TN or offset equivalent load by 2025.*

The Commonwealth should require all existing conventional or alternative onsite systems in sensitive areas to install best available technology (BAT) for TN or offset an equivalent load for the design life of the system. Single family home systems that hook up to an existing municipal or a community onsite system that achieves BAT would also meet this mandate. “Sensitive areas” should be defined as onsite systems whose effluent dispersal components are within 100 feet of the ordinary high water mark of surface waters, open channel MS4s, sink holes, or other public or private sources, including wells, springs, and reservoirs. This 100-foot boundary is consistent with new EPA guidance for onsite systems on federal lands that calls for a 100-foot setback for system components from these waters.⁹⁵ Even a properly operating onsite system can disc

⁹⁵ EPA. 2010. Guidance for Federal Land Management in the Chesapeake Bay Watershed—Chapter 6. Decentralized Wastewater Treatment Systems.

TN that far exceeds secondary levels of treatment. Thus, systems operating in sensitive areas can result in a locally-significant direct discharges. Also, dilution should no longer be used for compliance with TN limits. Improved performance in these areas will help protect drinking water sources, shellfish waters, and help meet local bacteria TMDLs and other mandates, as well as help reduce pollution to the Bay downstream. This recommendation is consistent with the new proposed regulations for AOSS; however, this approach extends the more stringent requirements to all systems in sensitive areas.

Specific Code changes would be required to allow VDH to mandate TN treatment for conventional systems and allow system owners to access an appropriate offset program. Changes to the Sewage Handling and Disposal Regulations would also be needed. Lastly new grant, loan, and incentive programs are warranted to achieve this recommendation. A 15-year implementation schedule based on system size and risk is recommended to phase in this requirement.

(2) Require installation of BAT for all new and replacement septic systems within 1,000 feet of sensitive areas by 2012.

Virginia should require that all new and replacement onsite systems within 1,000 feet of sensitive areas achieve at least a BAT for TN or offset an equivalent load for the design life of the system. This is also consistent with recent EPA guidance and new law in Maryland.^{96,97} The BMP proposed by VDH in the draft WIP that employs a denitrification system with a shallow placed, pressure dosed dispersal system is one way to accomplish this level of treatment. As noted in the previous recommendation, specific Code and regulation changes will be needed to allow TN treatment standards for conventional systems and access to offsets by developers.

(3) Improve enforcement of the existing CBPA septic pump out provisions immediately, and expand those provisions Virginia Bay watershed-wide by 2025.

The Commonwealth must ensure that the septic system provisions of the CBPA are fully enforced to maximize capture of nutrients. The CBPA regulations require that septic systems in the Resource Protection Areas be pumped out at least every five years, or alternatively, install sediment trapping systems approved by VDH. Further, a five-year pump-out requirement should be required of all systems in the Virginia Bay watershed by 2025. A new law and regulations would be required to expand the pump-out requirement.

(4) Prohibit new onsite systems in sensitive areas by 2012.

The state should prohibit the placement of any onsite system components in sensitive areas as defined in the first recommendation. This action will prevent TN inputs, and even TP

⁹⁶ DEQ. 2010. *Virginia Draft 305(h)/303(d) Water Quality Integrated Report to Congress and the EPA Administrator for the Period January 1, 2003 to December 31, 2008.*

⁹⁷ State of Maryland. SB554: Chesapeake Bay Nitrogen Reduction Act of 2009.

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inputs, as phosphorus could be released if the systems discharge to hydric soils or soils that already saturated with phosphorus. This would require a Code and regulation changes.

(5) Establish a financial assistance program for system improvements by 2012.

The Commonwealth should create a tax credit program to assist system owners in complying with the first recommendation for this source sector. Appropriation of funding to support the existing betterment loan program should also be considered to assist with costs by the system owner. A Code change would be necessary to support this new program.

(6) Require offsets from all new systems through an in-lieu fee approach.

All nutrient pollution from new onsite systems should be offset. Adequate funds should be collected to offset the load for the life of the system. To ease compliance with this standard we suggest establishing an in-lieu fee program that allows landowners who are newly required to upgrade their systems the option to pay into a fund. Funds should be available for use by localities for nutrient reduction projects. Such a fund is discussed further in the NCE section below.

Conclusions

CBF concludes that full implementation of these recommendations will provide the level of reasonable assurance needed to achieve pollution reductions from the onsite sector in the revised pollution allocations based on Level 2 included in **Section IV**.

V. Expanded Nutrient Credit Exchange

Background

Market-based pollution trading programs have been established or are under development across the nation. Pollution trading in the United States began with the Acid Rain Program established in 1990 to reduce the atmospheric emission of sulfur dioxide and nitrogen oxides primarily from coal-fired power plants.⁹⁸ This program has been hailed as a success by EPA, industry, and others. Owing to the success in the air arena, as many as 70 water quality trading programs are underway or being explored across the country.^{99,100} Most of these programs used “point source-to-point source” credit trading approaches or were specifically limited by participants or geographic scale. Newer programs operating in Connecticut to protect the Long Island Sound and in Pennsylvania and Virginia for the Bay are the farthest along in setting up programs that allow “point source to NPS” trades, support offset of pollution from future

⁹⁸ Title IV of the Clean Water Act.

⁹⁹ www.epa.gov/owow/watershed/trading/tradingprograminfo.xls.

¹⁰⁰ S. Greenhalgh and M. Selman. 2005. *Nutrient Trading – A Water Quality Solution?* World Resources Institute. Presentation at OECD Workshop on Agriculture and Water: Sustainability, Markets, and Policies. November 2005.

and/or are focused on large coastal watersheds. A study by the Water Resource Institute in 2010 concluded that a Bay-wide nutrient trading program could help reduce nutrient pollution in the Bay in the most cost-effective and timely manner.¹⁰¹

Virginia established the NCE in 2005 and created a permitting mechanism for the program in 2006.^{102,103} This program allows point-to-point and NPS credit exchange for compliance, offsets to address growth, and “bubbling” or sharing of WLAs by WWTPs that are part of the same sewerage authority. In 2010, the code was amended to require offset of any nutrient pollution from new small WWTPs that discharge more than 1,000 GPD.¹⁰⁴ Also in 2009, a provision was added to allow compliance with stormwater requirements at §10.1-603.4 through the use of offsets.¹⁰⁵ The ability to use offsets was expanded to allow compliance with MS4 permits and TMDLs in 2010.¹⁰⁶

As noted in the WWTP sector section, the existing NCE has supported 46 point-to-point source nutrient contracts, which are projected to help accelerate pollution reductions at lesser cost. To our knowledge, no point source-to-NPS trades have taken place so far. Several private nutrient banks hold NPS offsets for sale, but the current excess capacity held by point sources and the lack of appropriate regulatory drivers for potential buyers has precluded a market for these offsets to date.

CBF supported the legislation that created the NCE programs described above. Our focus during development of the enabling legislation was to ensure that the program operated at an appropriate scale and with sufficient rules to meet the following broad goals: (i) ensure delivery of actual reduction in pollution loads to the Bay and its rivers, (ii) help offset pollution from future growth, (iii) protect local water quality and meet local mandates, and (iv) include realistic expectations and deadlines for the ability of the approach to solve water quality programs. Our conclusion after five years of operation is that the NCE is working as designed for point-to-point source trades, with some minor legislative changes it can facilitate offset of new growth, and lastly, with firm regulatory drivers, may eventually sustain a viable NPS trading component.

Draft WIP

The draft WIP proposes a significant expansion of the NCE. This program expansion is only vaguely described, short of indicating that it will reduce reliance on implementation of sector-specific BMPs, allow agriculture and onsite systems to purchase credits to achieve compliance, and that allocations—very aggressive allocations—for urban runoff and onsite systems can be attained through the expanded NCE. The draft WIP does not include any analysis of credit supply and demand, projected offset needs, the cost of credits, or any other data

¹⁰¹ Jones, C., et al. 2010. *How Nutrient Trading Could Help Restore the Chesapeake Bay*. WRI Working Paper. World Resources Institute.

¹⁰² Va. Code § 62.1-44.19.

¹⁰³ 9 VAC 25-820. General Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia. January 1, 2007.

¹⁰⁴ Va. Code §§ 62.1-44.19:14 and 62.1-44.19:15 (HB1135, 2010).

¹⁰⁵ Va. Code § 10.1-603.8:1 (by HB2168, 2009).

¹⁰⁶ Va. Code § 10.1-603.8:1.K (by SB627, 2010).

to prove that this approach can be sufficient to meet the pollution allocations. Further, the document fails to even mention the types of new legislative authority or regulatory changes are needed to launch an expanded program. In fact, the draft WIP is explicit that, “The specific details of an expanded nutrient credit exchange will be developed through the legislative and regulatory processes of the Commonwealth.”¹⁰⁷

While the NCE was recognized as an important tool in the draft worksheets, scoping scenarios, and draft plans presented to the SAG, the wholesale use of the NCE proposed in draft WIP appears to have been added late in the process. As presented, this approach raises significant concerns. Three problems undermine the potential success of an expanded program:

1. The lack of any regulatory mandate or other driver to compel the presumptive users of this expanded approach—the urban runoff or onsite sectors—to purchase credits. There would be no reason for an MS4 or homeowner to purchase credits unless they are required to improve their performance by a set amount by a set date.
2. The Commonwealth has a mixed record maintaining a firm cap in program participation. Maintaining pollution caps is absolutely critical to a successful market-based trading program. If participants believe it is more efficient to invest in efforts to seek an increased cap, rather than investing in credits, the program will not work. Requests for additional WLAs were before the General Assembly in the past, yet did not become law. To date at least two administrative requests for additional nutrient WLAs were rejected by the State Water Control Board.¹⁰⁸ However, in April 2009, the Board approved a request for additional pollution allocations by Merck.¹⁰⁹ And unfortunately, in September 2010, the Board overturned its previous denial (in April 2009) by approving a settlement which increased the WLAs of the Frederick-Winchester Service Authority Opequon WWTP.¹¹⁰ We fear some will argue that these decisions establish a precedent that caps are not firm.
3. There is no evidence presented in the draft WIP to support the premise that WWTPs would be willing to permanently give up via sale the amount of nutrient allocations that appear to be necessary to support an expanded effort. Excess wastewater capacity is “gold” to localities, and it seems unlikely that significant credit exchanges, even between WWTPs and MS4s that serve the same community, would be acceptable to local officials.

The draft WIP states in regard to filter feeders, such as oysters, that “Virginia is committed to increasing the population of these natural filters and believes credit for filter restoration and the associated nutrient removal should be recognized in implementing the James River TMDL.” The concept of integrating oyster restoration into nutrient trading programs

¹⁰⁷ See draft WIP, at 6.

¹⁰⁸ These denials included requests by the Craigsville and Boston Water and Sewer WWTPs.

¹⁰⁹ See Final Regulation, Agency Background Document, Virginia Regulatory Town Hall, May 7, 2009.

¹¹⁰ See *id.*; see also Order, dated October 19, 2010, Frederick-Winchester Service Authority v. Commonwealth, C.A. No. 9-4.7 (Winchester Cir. Ct., VA).

been evaluated by Virginia Commonwealth University and Virginia Tech and there has been growing support for this concept amongst stakeholders.¹¹¹

CBF is a leader in promoting native oyster restoration and oyster aquaculture, and is actively involved in the protection of menhaden and other filter feeders. However, at this time, for the following reasons, we oppose allowing oysters or other filter feeders placed instream to be used to generate nutrient offsets to assist permitted sources with attainment of water quality standards:

- Right now CBF can only support offset approaches that prevent or reduce pollution from entering surface waters, not those that will treat it after it has been released. Once in surface waters, TN and TP can cause ecological effects (algal blooms, dead zones, harm aquatic life) and it will be very difficult, if not impossible, to ensure that those effects will be adequately mitigated by oysters or other instream treatment options, particularly if they are not in the same geographic location.
- Nitrogen removal efficiency of oysters is very site specific. Consequently, we cannot be certain that their removal efficiencies will be the same at different locations and under different conditions. For example, if oysters are placed in polluted water, or exposed to algal blooms or other stressors, and they cease feeding or do not feed as efficiently, they may not remove as much pollution as anticipated.

We will, however, strongly support oysters as an adjunct to, not a replacement for, the reduction of pollution from land-based sources. Additionally, use of oysters and other filter feeders “off-stream” in constructed water bodies to provide additional treatment of WWTP discharges or runoff before it reaches waterways may be a potential option in the future.

Finally, the draft WIP recognizes the ability of the existing NCE to offset new loads from the largest WWTPs and introduces the concept of establishing a perpetual funding source for offsets that could have great promise as a way to truly offset loads from developed lands. While not committing to pursue new program capacity, the draft WIP identifies some workable solutions to fill gaps in the existing NCE program by requiring small WWTPs and onsite systems to purchase offsets.

Recommendations

- (1) *Establish firm mandates for regulated parties expected to participate in the NCE program by 2012.*

The Commonwealth should expeditiously establish more stringent nutrient limits and deadlines for compliance for the dischargers that are envisioned to participate in the expanded NCE. MS4s, onsite systems, and potentially, the largest non-significant dischargers would be subject to new mandates. Further, the state should work with the State Water Control Board to ensure that WLAs in place for significant WWTP plants are not increased to accommodate future

¹¹¹ <http://oyster.agecon.vt.edu/>.

plant capacity needs. As discussed earlier in this section, without a firm regulatory driver, there is nothing to compel source sectors to participate in any market-based trading programs.

(2) Create an in-lieu fee offset program for small dischargers by 2012.

To comply with retrofit or offset requirements placed on smaller dischargers, such as those from small WWTPs (less than 1,000 GPD) or onsite systems used for single family homes, Virginia should create an appropriate program to accept in-lieu fee payments to address delivered nutrient pollution for the working life of the system. The concept of establishing a fund that would set, collect, and manage these in-lieu payments such that needed “perpetual” reductions are provided is a good idea that should be explored further. Such funds could be provided to localities to pay for less intensive actions whose cost can reasonably be expected to be covered by the funds expected to be collected. Septic pump outs, buffers and tree planting, urban BMP maintenance, and urban nutrient management may be options.

(3) Establish different offset ratios for different types of development.

Maryland’s draft WIP introduced the use of different ratios for different types of development. New development of “greenfield” areas will be required to provide more offsets than development in existing or planned growth corridors. Such an approach can help encourage the types of high density development in growth areas that studies show are better for water quality. Virginia should consider building at least a modest version of this approach into the expanded NCE, perhaps requiring additional offsets for new development of forests and farmsteads, offsets for new development in UDAs or projects that achieve specific land-use principles. Efforts should be taken to ensure that the “net” offsets across all new development still compensate for new pollution loads.

VI. Two-Year Milestones

Background

EPA provided detailed guidance to the Bay jurisdictions about the content of the two-year milestones. “EPA expects the Watershed Implementation Plans and two-year milestones will contain **greater source sector and geographic load reduction** specificity, **rigorous assurance** that load reductions will be achieved, and **more detailed and transparent reporting** to the public than past Bay restoration efforts [*emphasis added*].”¹¹² Further, EPA April 2, 2010 follow-up guidance provides a series of questions to aid in WIP development. One question reads, “Does the Bay jurisdiction indicate how nutrient and sediment loads, by management basin, are expected to decrease over time so that EPA can assess future two-year milestones? The clear intent here is to avoid the mistake made in the past of waiting until deadlines are near before assessing progress (determining in 2007 that the 2010 goal would not be met for

¹¹² Letter from William Early, EPA, Acting Regional Administrator to L. Preston Bryant, Virginia Secretary of Natural Resources. November 4, 2009.

¹¹³ EPA. 2010. A Guide for EPA’s Evaluation of Phase I Watershed Implementation Plans. April 2, 2010.

example). EPA is looking for step-wise plans and targets that will assist with adaptive management and tracking progress by the jurisdictions and EPA during the 15-year life of the WIP.

Draft WIP

Unfortunately, the draft WIP does not comply with these requirements. It does not project the loads by basin and source sector or actions that will be pursued during each two-year period through 2025. The draft WIP indicates that, "Assessing compliance with two-year milestones will be based upon total loadings, not by compliance with individual source sector allocations."¹¹⁴ However, the draft WIP contradicts this stated approach by also stating that, "Another component of this adaptive management approach is a requirement to develop two year milestones that provide **specificity regarding pollutant control measures to be implemented** within each two year period and to support maximum accountability [*emphasis added*]."¹¹⁵ Based on the failure to provide any breakdown of two-year plans in the draft WIP, our presumption is that total loadings will be used to assess progress every two years.

Recommendations

The Commonwealth should describe in the final WIP the approximate pollution reduction milestones by source sector for each two-year period and list the anticipated actions it will take to help meet each milestone goal. Greater specificity should be provided for near-term efforts, with more general types of actions appropriate for longer-term efforts. This information is essential to meet EPA's and stakeholders requests for more accurate and transparent tracking of BMPs and pollution reduction progress.

¹¹⁴ See draft WIP, page 47.

¹¹⁵ Letter from William Early, EPA, Acting Regional Administrator to L. Preston Bryant, Virginia Secretary of Natural Resources. November 4, 2009.

EXHIBIT 2:

THE VALUE OF THE CHESAPEAKE BAY AND CLEAN WATER ACROSS VIR

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Provided below is a comprehensive presentation of the benefits or avoided costs that demonstrate the value of the Chesapeake Bay, its rivers, and clean waters across Virginia.

(1) The Chesapeake Bay provides significant economic benefits to the region.

Congress has recognized that the Chesapeake Bay is a “national treasure and resource of worldwide significance.”¹ A 1989 study from the state of Maryland that looked at fishing, tourism, property, and shipping activities estimated the value of the Bay to Maryland and Virginia to be \$678 billion.² Considering inflation, an expert panel in 2004 placed the value at over \$1 trillion, with an annual economic benefit of \$33 to \$60 billion.^{3,4,5} A 2010 report said that waters that make up Delaware’s portion of the Bay watershed—only one percent of the watershed—support 47,000 jobs and \$1 billion in annual economic activity.⁶

(2) The Bay supports an important commercial and recreational fishing economy.

The 2008 *Fisheries Economics of the U.S.* report by the National Oceanic and Atmospheric Administration (NOAA) indicates that commercial seafood industry in Maryland and Virginia contributed \$2 billion in sales, \$1 billion in income, and more than 41,000 jobs to the local economy.⁷ This same report showed economic benefits of saltwater recreational fishing that are equally as impressive, contributing \$1.6 billion in sales, which in turn contributed to more than \$800 million of additional economic activity and roughly 13,000 jobs.⁸ An earlier study by the Virginia Institute of Marine Science (VIMS) estimated that in 2004, recreational and commercial fishing contributed \$1.23 billion in sales, \$717 million in income, and more than 13,000 jobs in Virginia, with two-thirds of the impact from recreation.⁹ Other studies focused just on sport-fishing in Virginia found that salt waters alone generate \$1 billion and 5,000 jobs, and saltwater and freshwaters combined create over \$2 billion and 15,000 jobs.^{10,11} The Bay region generated \$908 million in commercial fishing landings from 2000 to 2004, with 97 percent coming from the

¹ Chesapeake Bay Restoration Act of 2000, Nov. 7, 2000, P.L. 106-457, Title II, § 202, 114 Stat. 1967.

² Maryland Department of Economic and Employment Development. 1989. *Economic Importance of the Chesapeake Bay*.

³ Chesapeake Bay Blue Ribbon Finance Panel. 2004. *Saving a National Treasure: Financing the Clean up of the Chesapeake Bay*. A Report to the Chesapeake Executive Council from the Chesapeake Bay Watershed Blue Ribbon Finance Panel.

⁴ EPA. 2009. *Draft Chesapeake Bay Compliance and Enforcement Strategy*.

⁵ Maryland Department of Natural Resources. www.dnr.state.md.us/dnrnews/infocus/bay_faq.html. Visited July 22, 2010.

⁶ Delaware’s Draft Phase I Chesapeake Bay Watershed Implementation Plan. September 1, 2010. Appendix F.

⁷ NOAA 2008. 2008 Fisheries Economics of the U.S.

⁸ NOAA 2008. 2008 Fisheries Economics of the U.S.

⁹ Kirkley, et. al. 2005. *Economic Contributions of Virginia’s Commercial Seafood and Recreational Fishing Industries: A User’s Manual for Assessing Economic Impacts*. Virginia Institute of Marine Science (VIMS), VIMS Marine Resource Report No. 2005-9, December 2005.

¹⁰ Southwick Associates. 2006. *The Relative Economics Contribution of U.S. Recreation and Commercial Fisheries*.

¹¹ America Sportfishing Association. 2008. *Sportfishing in America: An Economic Engine and Conservation Powerhouse*.

Bay.¹² Over one-third of the nation's blue crab harvest comes from the Bay, generating a value of approximately \$70 million in 2008, with an average value of \$55 million between 2003 and 2008.¹³ Rockfish generated \$97 million in 2003 and oysters \$13 million in 2008 for Maryland and Virginia.^{14,15,16} Shellfish aquaculture is growing in Virginia, with clams generating \$70 million per year and oysters \$7 million per year.¹⁷ And lastly, keep in mind that the recreational fishery also provides a significant financial offset for Bay residents; the cost of catching crabs is far less than having to buy them.

On the loss side, between 1994 and 2004 the value of Virginia's seafood harvest declined by 30 percent.¹⁸ VIMS has shown that when the broader impact on restaurants, crab processors, wholesalers, grocers, and watermen is added up, the decline of crabs in the Bay meant a cumulative loss to Maryland and Virginia of about \$640 million between 1998 and 2006.¹⁹ A report stated that between 1998 and 2006 crabbing-related jobs in Maryland and Virginia declined by 40 percent, from 11,246 to 6,760.²⁰ Other reports have estimated the decline in the number of watermen.^{21,22} A study by the University of Maryland demonstrated that decreases in dissolved oxygen can reduce crab harvests and revenue to watermen.²³ Threats from sewage and bacteria forced Maryland and Virginia to close or restrict oyster harvesting in 223,864 acres of the IChesapeake Bay and its tributaries in 2008, about eight percent of the total shellfish beds.²⁴ The decline of the Eastern oyster over the last 30 years has meant a loss of more than \$4 billion for Maryland and Virginia.²⁵ A fish kill in the Shenandoah River watershed in 2005 resulted in \$700,000 in economic loss.²⁶ Lastly, the Gulf oil spill in 2010 has cost the Virginia oyster industry \$11.6 million.²⁷

¹² Lellis-Dibble, K. A. et al. 2008. *Estuarine Fish and Shellfish Species in U.S. Commercial and Recreational Fisheries: Economic Value as an Incentive to Protect and Restore Estuarine Habitat*. U.S. Dep. Commerce, Tech. Memo. NMFSF/SPO-90.

¹³ NOAA 2008. 2008 Fisheries Economics of the U.S.

¹⁴ U.S. Department of the Interior. 2010. Landscape Conservation and Public Access in the Chesapeake Bay I. Revised Report Fulfilling Section 202(c) of Executive Order 13508.

¹⁵ Southwick Associates. 2005. *The Economics of Recreational and Commercial Striped Bass Fishing, 2005*.

¹⁶ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

¹⁷ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

¹⁸ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

¹⁹ Unpublished data. Dr. James Kirkley, Virginia Institute of Marine Science.

²⁰ CBF. 2008. *Bad Water and the Decline of Blue Crabs in the Chesapeake Bay*.

²¹ Environment Virginia, Research and Policy Center. 2009. Watermen Blues: Economic, Cultural and Community Impacts of Poor Water Quality in the Chesapeake Bay.

²² *Turning the Tide: Saving the Chesapeake Bay*, Island Press. Tom Horton. 2003.

²³ Mistiaen, J.A., I.E. Strand, and D. Lipton. 2003. Effects of environmental stress on blue crab (*Callinectes sapidus*) harvest in Chesapeake Bay tributaries. *Estuaries* Vol. 26:316-322.

²⁴ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

²⁵ CBF. 2010. *On the Brink: Chesapeake's Native Oysters: What It Will Take to Bring Them Back*.

²⁶ Papadakis, M. July 2006. *The Economic Impact of the 2005 Shenandoah Fish Kill: A Preliminary Economic Assessment*. James Madison University.

²⁷ T.J. Murray and J.E. Kirkley. 2010. *Estimated Economic Impact of Gulf Oil Spill on Virginia's Oyster Industry July 2010*. Virginia Institute of Marine Science. VIMS Marine Resource Report No. 2010-7.

(3) The Bay and Virginia's waters support a regionally vital tourist economy.

In 2007, visitors to recreational and heritage sites generated \$18 billion in Virginia.²⁸ Tourist and leisure related industries employed nearly 350,000 workers in Virginia as of June 2010.²⁹ More than 23 million people visited Virginia's national and state parks during 2009.³⁰ Statewide, travelers spent over \$17 billion during 2006.³¹ Nationwide in 2006, almost three million people fished, hunted, or watched wildlife, and spent over \$2.4 billion pursuing these activities.³² Virginia, and to a lesser extent Maryland, also support significant freshwater recreational fisheries, with roughly one million anglers participating and contributing millions to local economies.³³ A 2006 study compared the 1996 water quality of the Bay with what it would have been without the Clean Water Act and estimated that the annual recreational boating, fishing, and swimming benefits of water quality improvements ranged from \$357.9 million to \$1.8 billion.³⁴ A recent study in Hampton, Virginia found that resident and non-resident boaters were responsible for \$55.0 million in economic impact to this city. This impact represents \$32.5 million in new value added, \$22.2 million in incomes, and 698 jobs.³⁵ The majority of expenditures were by out-of-region boating-visitors which represents an inflow of new capital into the community. The study also indicated that "water quality, fishing quality and other environmental factors" ranked among the most important factors that influence a boater's decision on where to keep his/her boat.

(4) Clean waterways increase property value.

An EPA study indicated that clean water can increase the value of single-family homes up to 4,000 feet from the water's edge by up to 25 percent.³⁶ A 2000 study concluded that improvements in water quality along Maryland's western shore to levels that meet state bacteria standards could raise property values six percent.³⁷ High water clarity was shown to increase average housing value by four to five percent or thousands of dollars.^{38,39} Homes situated near seven California stream restoration projects had 3 to 13 percent higher property values than similar

²⁸ Virginia Tourism Corporation. *Impact of Travel on Virginia, Preliminary 2007 and 2006*.

²⁹ U.S. Department of Labor, Bureau of Labor Statistics. www.bls.gov/eag/eag.VA.htm. Visited July 22, 2010.

³⁰ Virginia Tourism Monitor Information. www.vatc.org/research/Parks/Parks.html. Visited July 22, 2010.

³¹ Virginia Tourism Authority. September 2007. *The Economic Impact of Domestic Travel Expenditures on Virginia Counties 2006*. A Study Prepared for the Virginia Tourism Authority by the Travel Industry Association.

³² U.S. Fish and Wildlife Service. 2006. *2006 Survey of Fishing, Hunting, and Wildlife Associated Recreation*. FHW/06-NAT.

³³ U.S. Department of the Interior, Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2006. *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*.

³⁴ Morgan, et al. 2001. Benefits of water quality policies: the Chesapeake Bay, *Ecological Economics*, Volume 39, Issue 2, November 2001, pp. 271-284.

³⁵ Virginia Institute of Marine Science. 2009. *Assessment of the Economic Impacts of Recreational Boating in the City of Hampton*.

³⁶ EPA. 1973. *Benefit of Water Pollution Control on Property Values*. EPA-600/5-73-005, October 1973.

³⁷ C. G. Leggett, et al. 2000. Evidence of the effects of water quality on residential land prices. *J. Environ. Econ. Manage*, Volume 39, No. 2, pp. 121-144.

³⁸ Jentes Banicki, J. 2006. Hot Commodity: Cleaner Water Increases Lake Erie Property Values. *Twinline*. Volume 28, No. 3-4. Ohio Sea Grant, Ohio State University.

³⁹ P. Joan Poor, et al. 2007. Exploring the hedonic value of ambient water quality: A local watershed-based study. *Ecological Economics*, Volume 60, No. 4, pp. 797-806.

homes located on damaged streams.⁴⁰ A study by the Brookings Institute projected a ten percent increase in property values for homes that would abut a proposed \$26 billion Great Lakes restoration project.⁴¹ Lastly, the City of Philadelphia estimates that installation of green stormwater infrastructure will raise property values two to five percent, generating \$390 million over the next 40 years in increased values for homes near green spaces.⁴²

(5) Healthy waters reduce public health costs.

Clean water decreases public health burdens associated with consuming tainted fish shellfish or exposure to waterborne infectious disease while recreating. A study estimated that associated with exposure to polluted recreational marine waters to be \$37 per gastrointestinal illness, \$38 per ear ailment, and \$27 per eye ailment.⁴³ Threats from sewage and bacteria forced Maryland and Virginia to close or restrict oyster harvesting in 223,864 acres of the Bay and tributaries in 2008, about eight percent of the total shellfish beds.⁴⁴ A 2009 CBF report reviewed swimming advisories and potential health problems associated with blue-green algae (cyanobacteria) blooms in coastal rivers across the region.⁴⁵ Although closing a beach is meant to prevent illness, it directly and indirectly results in an economic loss for local businesses and the county where the beach is located. For example, a study by NOAA indicated that a one-day closure in Huntington Beach, California was expected to result in thousands of dollars of lost income for local communities.⁴⁶

(6) Pollution reductions lower drinking water and other utility costs.

Reducing pollution inputs from pipes and land-based sources can reduce the cost to treat drinking water sources to safe standards. New York City's expenditure of \$1 billion over the last decade to protect the watersheds north of the city that supply its drinking water avoided the need to build a \$6 billion treatment plant.⁴⁷ An EPA study of drinking water source protection efforts concluded that for every \$1 spent on source water protection, an average of \$27 is saved.

⁴⁰ C. Streiner, et al. 1996. *Estimating the Benefits of Urban Stream Restoration Using the Hedonic Price Method: A thesis in partial fulfillment of the requirements for the Degree of Master of Science*. Dept. of Agriculture and Economics. CSU.

⁴¹ J.C. Austin, et al. 2007. *America's North Coast: A Benefit-Cost Analysis of a Program to Protect and Restore the Great Lakes*. Brookings Institute, Great Lakes Economic Initiative.

⁴² Philadelphia Water Department. 2009. *Green City, Clean Waters: The City of Philadelphia's Program for Combined Sewer Overflow Control—A Long Term Control Plan Update*. Summary Report. September 1, 2009.

⁴³ R. H. Dwight, et al. 2005. Estimating the economic burden from illnesses associated with recreational coastal pollution - a case study in Orange County, California. *Journal of Environmental Management*. Volume 76, No. 1, 95-103.

⁴⁴ Data from Departments of Health in Virginia and Maryland cited by Chesapeake Bay Foundation. 2010. *Oyster Brink: Chesapeake's Native Oysters. What it will take to bring them back*.

⁴⁵ CBF. 2009. *Bad Water 2009: The Impact on Human Health in the Chesapeake Bay Region*.

⁴⁶ http://stateofthecoast.noaa.gov/coastal_economy/beacheconomics.html.

⁴⁷ DePalma, A. 2006. New York's Water Supply May Need Filtering. *New York Times*. June 20, 2006. www.nytimes.com/2006/07/20/nyregion/20water.html?_r=1&hp&ex=1153454400&en=2be183debc88eae7&partner=homepage&oref=slogin. Visited July 22, 2010.

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water treatment costs.⁴⁸ Similarly, a study by the Brookings Institute suggested that a one percent decrease in sediment loading will lead to a 0.05 percent reduction in water treatment costs.⁴⁹

Proactive efforts to lessen stormwater flows today reduce future public costs needed to maintain navigation channels, remediate pollution and hazard flooding, and repair infrastructure and property damage caused by excessive runoff. Philadelphia estimates that after 40 years their installation of green infrastructure will create more than \$2 in benefits for every dollar invested, generating \$500 million in economic benefits, \$1.3 billion in social benefits, and \$400 million in environmental benefits.⁵⁰

(7) Installation of BMPs and treatment technologies improves water quality, creates jobs, and supports our economy.

A study by the University of Virginia found that implementation of the agricultural practices to reduce runoff pollution called for in Virginia's tributary strategy, such as livestock stream exclusion, buffers, and cover crops, would generate significant economic impacts. Over a five-year period these actions would create \$940 million in industrial output, a \$455 million impact on gross domestic product, and create nearly 12,000 jobs of one-year duration.⁵¹ This same study concluded that every \$1 spent to implement BMPs generates \$1.56 worth of economic activity.⁵² Further, a recent analysis of the value of investing in water and sewer infrastructure concluded that these investments typically yield greater returns than most other types of public infrastructure.⁵³ For example, one dollar of water and sewer *infrastructure investment* increases private output (Gross Domestic Product) in the long-term by \$6.35. Furthermore, adding one job in water and sewer creates 3.68 jobs to support that job.

(8) Clean waters sustain aesthetic and cultural value.

While not easily monetized, clean waterways improve aesthetics and viewsheds that attract businesses and visitors to the region, and nourish heritage economies and cultures that rely upon healthy and productive waters for their way of life.

⁴⁸ U.S. EPA. *Economics and Source Water Protection*. Presentation by Eric Winiecki, EPA.

⁴⁹ http://stateofthecoast.noaa.gov/coastal_economy/beacheconomics.html.

⁵⁰ Philadelphia Water Department. 2009. Green City, Clean Waters: The City of Philadelphia's Program for Combined Sewer Overflow Control—A Long Term Control Plan Update. Summary Report. September 1, 2009.

⁵¹ Rephann, T.J. 2010. Economic Impacts of Implementing Agricultural Best Management Practices to Achieve Goals Outlined in Virginia's Tributary Strategy. Weldon Cooper Center for Public Service, University of Virginia. February 23, 2010.

⁵² Rephann, T.J. 2010. Economic Impacts of Implementing Agricultural Best Management Practices to Achieve Goals Outlined in Virginia's Tributary Strategy. Weldon Cooper Center for Public Service, University of Virginia. February 23, 2010.

⁵³ Krop, R.A., C. Hernick, and C. Frantz. 2008. Local Government Investment in Water and Sewer Infrastructure: Adding Value to the National Economy. The U.S. Conference of Mayors, Mayors Water Council.

Attachment

CBF Letter on West Virginia WIP



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

**Comments from the Chesapeake Bay Foundation on
 West Virginia's Draft Watershed Implementation Plan
 November 8, 2010**

On behalf of the Chesapeake Bay Foundation's (CBF) more than 200,000 members please accept this letter as formal comment on *West Virginia's Chesapeake Bay TMDL Watershed Implementation Plan, A Product of the West Virginia WIP Development Team*. Also, we incorporate by reference the comments submitted by CBF, Boesch, *et al.*, and the Choose Clean Water Coalition to Administrator Jackson on November 8, 2010, Docket no. EPA-R03-OW-2010-0736.

We very much appreciate the dedication of the many state agency staff that contributed to the draft Watershed Implementation Plan (WIP). We further thank the state for the opportunity to comment upon this critical work. Unfortunately, the draft WIP falls short, not only of achieving the necessary load allocations for nitrogen and sediment called for in the draft Chesapeake Bay Total Maximum Daily Load (TMDL), but also in providing the necessary reasonable assurance that the programs, policies, and other necessary actions will be put in place by 2025.

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water listings for many watershed states. *See American Canoe v. EPA*, 54 F. Supp. 2d 621 (E.D. Va. 1999). On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, with the EPA Administrator, Carol Browner, the *Chesapeake 2000* agreement which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. In 2002, Governor Wise of West Virginia signed a formal agreement to work with the other jurisdictions to "achieve the nutrient and sediment reduction targets...to achieve the goals of a clean Chesapeake Bay by 2010."

In December 2003, the EPA, West Virginia and the other Bay jurisdictions agreed to the nitrogen, phosphorus, and sediment allocations that became the basis for "tributary strategies," designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. West Virginia issued its own tributary strategy in 2005.¹ In it, the state explicitly recognizes that failure to achieve the necessary load reductions would result in the development of the TMDL. (p. 11). Unfortunately, the Bay and many of its tidal waters were not de-listed, triggering the need to develop the Bay TMDL – a process in which West Virginia has been a full and cooperative participant.

¹ West Virginia's Potomac Tributary Strategy. A Product of the West Virginia Tributary Strategy Stakeholders Working Group. Submitted to the Chesapeake Bay Program. November 7, 2005.

In addition, many of West Virginia's waters within the Potomac watershed are listed as impaired due to unhealthy benthic macroinvertebrate communities or high levels of fecal coliform bacteria.² Intensive agriculture (i.e., livestock waste) has been implicated as the source of bacteria in many of these streams³ and also as a contributor to the impaired biological communities.⁴ Practices that the state needs to implement to reduce the impairments to the waters are similar to those needed to reduce nitrogen, sediment and phosphorus loads to the Potomac River and Chesapeake Bay.⁵ Cleaning up local waters will improve local economy by enhancing recreational opportunities associated with fishing, swimming, etc.

To restore local rivers and streams and, ultimately, the Chesapeake Bay, we strongly encourage the state to provide the necessary details in their WIP for how they will achieve the necessary reductions by 2025, consistent with EPA's correspondence to the Principals' Staff Committee on September 11, 2008, November 4, 2009, and April 2, 2010. West Virginia's responsibility to develop an adequate WIP that meets the Bay TMDL allocations and provides reasonable assurances of required pollution reductions is founded on the firm requirements of federal law.

The Clean Water Act (CWA or Act)⁶ provides the basis on which the draft WIP must be evaluated. Enacted in 1972 to compel the restoration of the nation's waters,⁷ the CWA requires the states to establish water quality standards and to take the necessary actions, including taking by upstream states, to ensure that the waters meet those standards, thereby achieving CWA goals.⁸ If a state does not promulgate water quality standards or falls short of CWA requirements in doing so, EPA will set the standards for the state.⁹ The CWA prescribes limits of technology-based effluent limitations for most point sources discharges¹⁰ and, if those measures do not achieve water quality standards, the Act requires the use of water quality-based controls under Section 303(d).¹¹

The draft WIP forms part of the CWA's § 303(d) TMDL program, which requires identification and listing of all impaired water bodies within a state's borders. For each listed segment, Sections 303 and implementing regulations require the state to establish a TMDL for specified pollutants.¹² A TMDL is the maximum amount of a pollutant -- from background, point and non-point sources -- that can be discharged into the water body without violating water quality standards.

² http://www.dep.wv.gov/WWE/watershed/IR/Documents/WV_IR_2008_303dList_Supplements_Only_FIN_81202.pdf

³ An Ecological Assessment of the Potomac River Direct Drains Watershed. January 2005.

http://www.dep.wv.gov/WWE/watershed/wqmonitoring/Documents/EcologicalAssessments/EcoAssess_Potomac_05.pdf

⁴ An Ecological Assessment of the South Branch of the Potomac River Watershed. P. 68.

http://www.dep.wv.gov/WWE/watershed/wqmonitoring/Documents/EcologicalAssessments/EcoAssess_SouthBranch_05.pdf

⁵ Pg. 68, citation above.

⁶ 33 U.S.C. §§ 1251, *et seq.*

⁷ 33 U.S.C. §§ 1251(a)(2) and 1313(c)(1) (CWA goal is to "restore and maintain the chemical, physical and biological integrity of the Nation's waters").

⁸ 33 U.S.C. §§ 1251(a), 1312, 1313; 40 C.F.R. §§ 122.44, 130.3, 131.2.

⁹ 33 U.S.C. §§ 1303(b), (c)(3)-(4).

¹⁰ 33 U.S.C. § 1311(b)(1).

¹¹ 33 U.S.C. § 1313(d).

¹² 33 U.S.C. § 1313(d)(1)(C). Development of a TMDL is mandatory when triggered by the CWA. See *Nat Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on the CWA).

nonpoint sources, together with a margin of safety -- that the water body can receive and still attain water quality standards.¹³ When triggered by CWA requirements, the states and EPA are required to establish a TMDL, as courts have recognized.¹⁴

Once a TMDL is established and approved by EPA, the affected states must adequately implement it to ensure water quality goals are attained. *See Sierra Club v. Meiburg*, 296 F.3d 1021(11th Cir. 2002). Thus, CWA § 303(e)(1) requires each state to have a continuing planning process that results in implementation plans for all navigable waters within state boundaries, which include effluent limitations and compliance schedules as required, § 303(d) TMDLs for pollutants, and “adequate implementation, including schedules of compliance, for revised or new water quality standards,” including those of downstream states.¹⁵ Resort to a TMDL is the CWA’s “backup” strategy for achieving water quality standards; it is invoked when point source permits and best management practices (BMPs) for non-point sources (NPS) have not succeeded.¹⁶ Accordingly, EPA may only approve a state-submitted implementation plan that provides assurances it will succeed in “implement[ing] applicable water quality standards.”¹⁷

What constitutes reasonable assurances will vary depending on the water body and the pollution sources at issue.¹⁸ For waters impaired by both point and nonpoint sources, a TMDL may not allocate WLAs based on an assumption that NPS load reductions will occur unless the TMDL provides reasonable assurances that NPS control measures will achieve expected load reductions.¹⁹ The bottom line is clear: To carry out CWA’s command to ensure water quality standards are attained, EPA must be able to determine that a plan’s claimed load allocations are not based on excessively optimistic hopes concerning the amount of NPS pollutant reductions that will occur. “If the reductions embodied in load allocations are not fully achieved because of a failure to fully implement needed NPS controls, the collective reductions from point and NPS will not result in attainment of the water quality standards.”²⁰

Congress’s use of the word “shall” in Section 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs).

¹³ See 33 U.S.C. § 1313 (d)(1)(C). Effluent limits in NPDES permits must be consistent with “assumptions and requirements” of any “available waste load allocation” in an approved TMDL. 40 CFR § 122.44(d)(1)(vii)(B) See e.g., *Pronsolino v. Nastro*, 291 F. 3d 1123 (9th Cir. 2002).

¹⁴ See e.g., *Scott v. Hammond*, 741 F. 2d 992 (7th Cir. 1984) (lengthy inaction on the part of a state can constitute a “constructive submittal” of an inadequate TMDL, thereby transferring the duty to prepare to EPA); *Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y.1995) (EPA must establish TMDLs based on Congress’s use of the word “shall” in CWA § 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs); *Sierra Club v. Hankinson*, 939 F. Supp. 872, 873 (N.D. Ga. 1996) (To attain CWA goals, EPA must ensure that TMDLs are implemented).

¹⁵ See 33 U.S.C. §§ 1251(a), 1313(e)(1) and 1313(e)(3)(C),(F); 40 C.F.R. Part 130.6(b),(c) (TMDLs must be included in Water Quality Management Plans used to direct implementation).

¹⁶ See 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. 130.7(b)(1).

¹⁷ See 33 U.S.C. § 1313(d)(2).

¹⁸ See *Guidelines for Water Quality-Based Decisions: The TMDL Process* (EPA Office of Water Regulations and Standards) (“1991 Guidance”).

¹⁹ *Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992*, U.S. E.P.A. (2002), available at <http://www.epa.gov/owow/tmdl/guidance/final52002.html>.

²⁰ See Correspondence, dated November 9, 2009, from EPA to Secretary Preston Bryant, Chair, of the Principals’ Staff Committee.

The current draft WIP from West Virginia does not satisfy the requirements of the Clean Water Act. For one, it fails to achieve the necessary allocations for nitrogen and phosphorus and it fails to provide the necessary reasonable assurance that the required reductions will be achieved.

We agree with EPA's assessment of West Virginia's draft WIP.²¹ Improvements should include more details on how loads from new development will be tracked and offset and specific information on permit limit requirements and compliance schedules for wastewater treatment plants. West Virginia should also strengthen the section dealing with achieving needed reductions from agriculture, which contributes the vast majority of the state's sediment, phosphorus and nitrogen loads to the Bay. The recent draft report by the U.S. Department of Agriculture highlights that although progress has been made in reducing sediment, nutrient and pesticide losses from farm fields through conservation practice implementation in the Chesapeake Bay region, a significant amount of conservation treatment remains to be done to reduce nonpoint agricultural sources of pollution.²² West Virginia is relying heavily on existing conservation programs, but history has shown that the status quo is insufficient. The state must specify more details on how implementation will be accelerated through enforcement or otherwise binding measures.

We support the recommendation to revise the state's phosphorus index. We urge West Virginia to work with scientists in the other Bay jurisdictions to come up with a regional approach to the protective of water quality. We are pleased to learn that a poultry litter gasification system is currently being piloted and encourage West Virginia to work with the poultry industry to facilitate other waste to energy projects.

We sincerely hope that the final WIP submitted to EPA is sufficient, so as to avoid the need for EPA to invoke the "backstop" provisions in its proposed TMDL. Thank you for the opportunity to comment.

Sincerely,



Beth L. McGee, Ph.D.
Senior Water Quality Scientist

²¹ http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/WIPEVALUATIONS/PortfolioOfDraftWIPs.pdf

²² USDA October 2010. Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region

Attachment

CBF Letter on District of Columbia WIP



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

**Comments from the Chesapeake Bay Foundation on
the District of Columbia's Draft Watershed Implementation Plan
November 8, 2010**

On behalf of the Chesapeake Bay Foundation's (CBF) more than 200,000 members please this letter as formal comment on *Draft Chesapeake Bay TMDL Watershed Implementation District of Columbia Department of the Environment, September 1, 2010*. Also, we incorporate by reference the comments submitted by CBF, Boesch, *et al.*, and the Choose Clean Water Coalition to Administrator Jackson on November 8, 2010, Docket no. EPA-R03-OW-2010.

We very much appreciate the dedication of the many District agency staff that contributed to the draft Watershed Implementation Plan (WIP). We also appreciate and acknowledge efforts currently underway to upgrade the Blue Plains Wastewater Treatment Plant and to implement the Long-term Control Plan that will reduce pollution associated with combined sewer overflow. Unfortunately, the draft WIP falls short in achieving the necessary load allocations for sediment called for in the draft Chesapeake Bay Total Maximum Daily Load (TMDL) and providing reasonable assurance of achieving pollution reductions from urban stormwater runoff.

As you know, the process of developing the Bay-wide TMDL actually began over a decade ago with a series of federal judicial consent decrees and settlement agreements over impaired water body listings for many watershed states. See *American Canoe v. EPA*, 54 F. Supp. 2d 621 (E.D. Va. 1999); *Kingman Park Civic Ass'n v EPA*, 84 F.Supp. 2d 1, 2 (D.D.C. 1999). On June 28, 2000, the governors of Virginia, Maryland, and Pennsylvania, the chair of the Chesapeake Bay Commission, and the Mayor of the District of Columbia responded to the various decrees and agreements by signing, with the EPA Administrator, Carol Browner, the *Chesapeake 2000* agreement which, among other things, committed to reduce nitrogen, phosphorus, and sediment sufficiently to remove the Bay and its tidal tributaries from the impaired waters lists by 2010.

In December 2003, the EPA, the District of Columbia, and the other Bay jurisdictions agreed to the nitrogen, phosphorus, and sediment allocations that became the basis for "tributary strategies," designed to remove the Bay and its tidal tributaries from the impaired waters lists by 2010. The District of Columbia issued its own tributary strategy in 2004.¹ Unfortunately, the Bay and many of its tidal waters were not de-listed, triggering the need to develop the Bay TMDL – a process in which the District has been a full and cooperative participant.

To restore water quality in the Anacostia and Potomac Rivers, and, ultimately, the Chesapeake Bay, we strongly encourage the District to address the deficiencies EPA identified in the District's draft WIP² and provide the necessary details, consistent with EPA's correspondence to the Principals' Staff Committee of September 11, 2008, November 4, 2009, and April 2, 2010.

¹ The District of Columbia 2004 Nutrient and Sediment Tributary Strategy. Prepared by the District of Columbia Department of Health. June 2004.

² http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/WIPEVALUATIONS/PortfolioOfDraftWIPs.pdf

The District's responsibility to develop an adequate WIP that meets the Bay TMDL allocations and provides reasonable assurances of required pollution reductions is founded on the firm requirements of federal law.

The Clean Water Act (CWA or Act)³ provides the basis on which the draft WIP must be evaluated. Enacted in 1972 to compel the restoration of the nation's waters,⁴ the CWA requires the states to establish water quality standards and to take the necessary actions, including those by upstream states, to ensure that the waters meet those standards, thereby achieving CWA's goals.⁵ If a state does not promulgate water quality standards or falls short of CWA requirements in doing so, EPA will set the standards for the state.⁶ The CWA prescribes the use of technology-based effluent limitations for most point sources discharges⁷ and, if those measures do not achieve water quality standards, the Act requires the use of water quality-based controls under Section 303(d).⁸

The draft WIP forms part of the CWA's § 303(d) TMDL program, which requires identification and listing of all impaired water bodies within a state's borders. For each listed segment, Section 303 and implementing regulations require the state to establish a TMDL for specified pollutants.⁹ A TMDL is the maximum amount of a pollutant -- from background, point and nonpoint sources, together with a margin of safety -- that the water body can receive and still attain water quality standards.¹⁰ When triggered by CWA requirements, the states and EPA are required to establish a TMDL, as courts have recognized.¹¹

Once a TMDL is established and approved by EPA, the affected states must adequately implement it to ensure water quality goals are attained. *See Sierra Club v Meiburg*, 296 F.3d 1021(11th Cir. 2002). Thus, CWA § 303(e)(1) requires each state to have a continuing planning process that results in implementation plans for all navigable waters within state boundaries, which include effluent limitations and compliance schedules as required, § 303(d) TMDLs for pollutants, and "adequate implementation, including schedules of compliance, for revised or new

³ 33 U.S.C. §§ 1251, *et seq.*

⁴ 33 U.S.C. §§ 1251(a)(2) and 1313(c)(1) (CWA goal is to "restore and maintain the chemical, physical and biological integrity of the Nation's waters") .

⁵ 33 U.S.C. §§ 1251(a), 1312, 1313; 40 C.F.R. §§ 122.44, 130.3, 131.2.

⁶ 33 U.S.C. §§ 1303(b), (c)(3)-(4).

⁷ 33 U.S.C. § 1311(b)(1).

⁸ 33 U.S.C. § 1313(d).

⁹ 33 U.S.C. § 1313(d)(1)(C). Development of a TMDL is mandatory when triggered by the CWA. *See Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on Congress's use of the word "shall" in Section 303); *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs).

¹⁰ *See* 33 U.S.C. § 1313 (d)(1)(C) . Effluent limits in NPDES permits must be consistent with "assumptions and requirements" of any "available waste load allocation" in an approved TMDL. 40 CFR § 122.44(d)(1)(vii)(B). *See e.g., Pronsolino v. Nastro*, 291 F. 3d 1123 (9th Cir. 2002).

¹¹ *See e.g., Scott v. Hammond*, 741 F. 2d 992 (7th Cir. 1984) (lengthy inaction on the part of a state can constitute a "constructive submittal" of an inadequate TMDL, thereby transferring the duty to prepare to EPA); *Natural Resources Defense Council v. Fox*, 909 F. Supp. 153 (S.D.N.Y. 1995) (EPA must establish TMDLs based on Congress's use of the word "shall" in CWA § 303); *Sierra Club v. Hankinson*, 939 F. Supp. 872, 873 (N.D. Ga. 1996) (To attain CWA goals, EPA must ensure that TMDLs are implemented). ; *Alaska Center for the Environment v. Reilly*, 762 F. Supp. 1422 (W.D. Wa. 1991) (EPA has a mandatory duty to promulgate TMDLs) .

water quality standards,” including those of downstream states.¹² Resort to a TMDL is the CWA’s “backup” strategy for achieving water quality standards; it is invoked when point source permits and best management practices (BMPs) for non-point sources (NPS) have not succeeded.¹³ Accordingly, EPA may only approve a state-submitted implementation plan that provides assurances it will succeed in “implement[ing] applicable water quality standards.”

What constitutes reasonable assurances will vary depending on the water body and the pollution sources at issue.¹⁵ Most, if not all, of the pollution loads coming from the District fall under National Pollutant Discharge Elimination System permit which provides a foundation for providing reasonable assurance. The District, however, must ensure the final WIP achieves necessary pollution reductions and sets a timeline for achieving them by the 2017 and 2025 implementation deadlines.

Thank you for the opportunity to comment on this critically important issue.

Sincerely,



Beth L. McGee, Ph.D.
Senior Water Quality Scientist

¹² See 33 U.S.C. §§ 1251(a), 1313(e)(1) and 1313(e)(3)(C),(F); 40 C.F.R. Part 130.6(b),(c) (TMDLs must be included in Water Quality Management Plans used to direct implementation); *Environmental Defense Fund v. Costle*, 657 F.2d 275 (D.C. Cir. 1981).

¹³ See 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. 130.7(b)(1).

¹⁴ See 33 U.S.C. § 1313(d)(2).

¹⁵ See *Guidelines for Water Quality-Based Decisions: The TMDL Process* (EPA Office of Water Regulation Standards) (“1991 Guidance”).

Attachment

CBF Recommendations for Calculating Offsets



CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

Chesapeake Bay Foundation Recommendations for Calculating Offsets
September 16, 2010

To achieve and maintain the pollution caps in the Bay's watershed, the States and D.C. must adopt offset policies that will ensure that, while we reduce loads from existing sources, we are not losing ground to new sources. This document provides a framework for how to calculate and track offsets relative to the Bay TMDL and associated Watershed Implementation Plans (WIPs) for each pollution source sector. Key issues include: What sources are included? What are the baseline pollution loads for comparisons? How would such a program be implemented? The underlying assumption is that some version of the state trading programs will provide the necessary legal and policy framework for purchasing offsets. The purpose of this document is to lay the framework for what constitutes a "new load" and how it should be quantified.

Offsets must be provided by all new and expanding point and nonpoint sources, including wastewater treatment plants, septic systems, municipal storm sewer systems, private development, and confined animal feeding operations (CAFOs). The basic tenants of the offset policy include:

- 1) All new and expanding private and public sources of pollution should be completely offset above a sector-specific "baseline" condition in place before a new or expanding pollution loads begins.
- 2) Offsets should be on the ground and generating pollution reductions before they may be acquired, with the possible exception of smaller loads from single family homes, septic systems, and small development sites.
- 3) New loads from new development need to be offset in perpetuity, with the possible exception of smaller loads.
- 4) Offsets must achieve at least a 1:1 ratio, but preferably more. If nonpoint sources are involved, the offset credits required should be consistent with the states trading policy (e.g., 2:1 in VA).
- 5) EPA should expeditiously develop and maintain the tools the states and local government will need to estimate new loads and operate programs to deliver offsets.

Proposed Policy for Each Pollution Source Sector:

1) Wastewater

Wastewater treatment plants (WWTP): Pollution loads from new or expanded municipal and industrial WWTPs of *all* sizes (from the largest significant discharge to small package plants serving single family homes) should be offset. The

mechanism for implementation and tracking is via NPDES permits and/or state regulations.

Septic: Loads from new or expanded conventional or alternative onsite septic systems (AOSS) of all size must be offset. This approach ensures consistency and equity across all sources of wastewater and prevents creating an incentive for placement of smaller, de-centralized systems that are inconsistent with local growth plans. An in-lieu fee program may be appropriate for smaller discharges. The mechanism for implementation and tracking should be state/local approval of the system or NPDES permits for systems that discharge to sensitive areas.

In addition, because water reuse, such as use for spray irrigation and industrial cooling water, is likely to become increasingly popular as a mechanism to “offset” additional loads from WWTPs and septic systems, we note that it is inappropriate to assume that nutrient loads from water reuse is zero. There will be some nutrient losses to the environment and these need to be estimated and offset as appropriate.

2) Urban and Suburban Runoff

Active Construction: Existing state construction general permits and related erosion and sediment control programs are woefully inadequate. We recommend that existing state programs be updated and revised by 2011 to ensure consistency with the federal effluent limit guidelines (ELGs) and specifically include more stringent rules for site stabilization and phasing. In the near term, rather than recommend offsets, we recommend compliance with the federal ELGs and improvements to existing programs. In the long term, depending on the success of these efforts to curb pollution from active construction, the issue should be revisited to determine if offsets are necessary. The mechanism for implementation and tracking should be the state CGP and/or local erosion and sediment control programs.

Post-Construction: For new development (i.e., greenfield), the baseline should be a forested condition. Offsets within the subwatershed that maximize pollution reductions, cost efficiency, and consistency with sound land use concepts should be encouraged. Further, note that the model used to simulate baseline and developed condition should be site specific (e.g., something like Nutrient Net, VA’s runoff reduction spreadsheet, or Schuler’s Environmental Site Design spreadsheet for MD). New loads from development that is 5,000 sq ft or greater should be offset in perpetuity. For projects closer to the smaller end of this size, the offset mechanisms should be flexible so as to not be too onerous, and could include fee in lieu type approach or restoration projects conducted within the community that is being affected. The mechanism for implementation and tracking should be the state CGP and/or state or local stormwater programs.

We are not seeking offsets for new loadings from redevelopment projects at this time as such projects should in the long-term reduce existing pollution loads even with lesser site level requirements than new development projects.

Increased Vehicle Miles Traveled: Emissions from cars, while important, may be difficult to quantify. Consequently, we advocate that the baseline for comparison of new loads from development be conservative because we recognize that we are not accounting for additional loads associated with other activities such as increased vehicle miles traveled.

Grandfathering: We recognize there will be a need to grandfather projects that are already in the permitting process. We recommend that any permits issued after December 31, 2010 be required to offset loads as described above.

3) Confined Animal Feeding Operations (CAFOs)

Confined Animal Feeding Operations (CAFOs) are regulated as point sources under the Clean Water Act. Hence, like other point sources, loads from new or expanding CAFOs must be required to offset new loads of nitrogen, phosphorus and sediment associated with increasing the number of animals in a watershed. Offsets must include all sources of pollution loading including volatilization and subsequent deposition of ammonia-nitrogen.

One approach to achieving this goal for the CAFO sector is to establish technology based effluent limitation guidelines for new or expanding CAFOs combined with an offset program for remaining loads that are technologically and/or economically unfeasible to reduce through best available control technologies. Producers could be offered the choice of utilizing established loading emissions factors (perhaps on a per animal basis) or providing a professional analysis of loads utilizing EPA accepted estimation methodology.

CBF further suggests that there be a clearly defined process for incorporating new technologies and management practices that achieved enhanced nutrient removal in CAFO load calculations.